# NEW-YORK FARMER,
## AND AMERICAN GARDENER'S MAGAZINE.

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## ORIGINAL COMMUNICATIONS.

*Improved Short Horns.* By H. C. [For the New-York Farmer.]

The British Farmer's Magazine, for April, 1835, has been received, but is rather barren of interesting matter. A considerable portion as heretofore is occupied with British statistics and politics, by a writer who seems to be endued with an inexhaustible ductility of writing, and whose speculations, which have no interest here, remind us of the calculations of the extent to which a single grain of gold may be drawn or hammered out, if the means of its extension were equal to its capacity.

This number, however, contains a letter from an American correspondent, whom we are not able to identify, but who shows himself an inquisitive and experimental agriculturist. The subject is the "Acclimation of the Improved Short Horns." As the letter touches on matters of much interest and curiosity, we subjoin it. It is addressed to the Rev. Henry Berry, the editor of the Magazine.

"Sir,—The only apology I can offer for this intrusion on both your time and attention, must rest on the interest and sympathy common to those who are pursuing the same subject with the same views; and when an individual like yourself is so much in advance of his contemporaries, he necessarily becomes subject to the tax of inquiry. Under these impressions have I ventured on a correspondence in which I feel there is but too much of selfishness, though I sometimes indulge the hope that you may possibly feel an interest in the progress of your favorite animals, the improved short horns, in this country, together with the wonderful facility with which they have adapted themselves to a climate whose variations will sometimes range as much as 50° of the thermometer in twenty-four hours; whose winter is rigorously cold and protracted, and whose summers are excessively warm and debilitating; the one sinking the mercury of Fah. thermometer 10° below zero, and the other raising it to 85° and 95° of heat in the shade! Add to this the fact that little or no provision of succulent food, roots, &c. is made for stock in this country, and that they are consequently confined to dry hay for above seven months in the year, which is generally "fed out" to them on the snow, without even a hovel to stand under by day or by night. To such exposures and hardships was I obliged to submit my cattle, before I could convince the farmers around me that their fine appearance and high condition were not the result of pampering care and attention. Ignorance and prejudice were both arrayed against me, and envy stood close at their heels in case of success.

"I consented to place a very fine young cow on the farm of a neighbor, there to be wintered with his two-year-old stock, and in all respects to fare as they did. She was placed with the young cattle in September, and in October they were driven on to a side hill, with a western aspect, there to winter on the snow, fed with nothing but hay, which was fed out to them twice a day, without house, shed, or barn of any description, to shelter them. The situation was well chosen for the object; it was a cold and bleak exposure, in full view of the village, and at the crossing of two roads which were much travelled. By the 10th of November our winter commenced in earnest; the ground was covered with snow; and remained so until the 19th of March; nor was the cow released from her winter quarters until the 10th of May, when she was turned out to grass in *precisely the same high condition* as when first driven to her winter station. So much for acclimation and fine constitution.

"From my childhood I have been enthusiastically fond of animals, and have communed much with them; from the puerile objects of pigeons and poultry, I passed to the more important stock of a farm, where in turn my hands have been occupied by the unpromising Alderney, the pretty Devon, the imposing Hereford; and at present by the valuable family of improved short horns; which latter have been drawn from the yards of ——— and ———. These are the sources from which I have drawn my present stock, with an occasional cross from the imported bull Admiral, sired by North Star, dam by Comet, which was sent by Sir Isaac Coffin a present to the state of Massachusetts. You will perhaps hardly be prepared for the fact, that the animals derived from ——'s stock are decidedly superior to those from ——'s —better in constitution, in form, and in their dairy qualities.

"I am, sir, thus particular in my history of these animals, not because they are mine, but because you are well acquainted with the yards from which I drew them; and the knowledge of how they have proved in this country, compared with ——'s, may be useful, as all facts are to an inquiring mind. ——'s stock have been remarkable for their deep milking—more so, I think, than that of any other in the country.

"I have been much embarrassed by a bull's (from ——'s stock) great uncertainty, and I much doubt if he ever sired over a dozen or fifteen calves in a season. A son of his is but one degree better; and so it has been with others of this family after they have become three years old. I think you once owned the dam. Is there any in-and-in breeding about her, that would account for such inability? My bulls are not kept high; they are put to hay in October, and are kept up until the middle of August, and then run to grass about two months. I do not grain them, or bestow any particular management on them during the season. I should feel greatly indebted to you for any advice you are disposed to give me in relation to this subject; or if willing to give me an account of your own method of raising, feeding, and treating a bull calf, it would be exceedingly valuable to me, and I should consider it a great favor. If attended with less trouble to yourself than a private letter, perhaps you will favor the readers of the British Farmer's Magazine with an article on the subject of the want of vigor so often found in high-bred animals. It would be interesting to trace the course of in-and-in breeding step by step, in its effects on the animal economy. I have sometimes thought that its effects were perceptible on the frame or bone of the animal, then on the muscles, then on the glands, afterwards on the general constitution, and lastly on the very intestines themselves; but with me this is little more than yankee guessing; with you it is matter of science and experiment. Your several most valuable essays on improving and breeding stock, I have; but I think none of them describe the course of in-and-in breeding. I have myself, with pigs, watched this in-and-in breeding as far as it has been practised, six times between brothers and sisters, and the last produce fatted easiest; this I do not understand.

"Residing as I do in a country scarcely acquainted with the first principles of breeding, and where indeed its science is almost matter of ridicule, I feel at times an anxiety lest I am losing ground; and that some general defect may creep into my herd until it becomes a characteristic feature no longer to be detected by comparison, for such I believe is frequently the case with those whose opportunity of comparing is, either from circumstances or conceits, confined to their own yards. Of course I can see but very few high bred animals, and my own are seldom seen by any who are competent to criticise the nicer and more finished points of high breeding. You will not therefore wonder at the anxiety and distrust consequent on my insulated situation; and the value I attach to correct portraits of approved animals, which at once address the eye, and leave so much *less* than the *most able* description *could* do to the filling up of the imagination. And

here, sir, let me acknowledge the great assistance I have received from the excellent portrait of one of your cows, which appeared in the August number of the British Farmer's Magazine, which, while it afforded me a clear comprehension of your beau-ideal of a short horn, was an admirable illustration of your valuable remarks on *compactness* of form, and that *symmetry* of parts which really constitute weight; whereas, it is but too often the case, that the animal of extravagant disproportion in some one or more points, catches the unpractised eye, and captivates the uneducated judgment.

"The best, the most elaborate description of form, is, after all, very unsatisfactory, as it is still to be embodied by the imagination of the reader; and could these creations of the fancy be seen, they would generally be the fac-similes of some favorite figure or style of animal at home. It is, therefore, that I attach so much importance and value to the pencil, as the best possible mode of conveying a correct idea of excellence in *form*; and feel exceedingly anxious that all the portraits published in that valuable work, the British Farmer's Magazine, should possess the same fidelity and correctness as that which there represents your own cow.

"I have just received, from Mr. J. Ellman's flock, half a dozen most beautiful ewes, and a very fine stout large yearling ram, and judging from this animal I should think he had regained the vigor and constitution which were so deficient in his father's, and that too, he says, without recourse to the "Hampshire cross." I mention this because I remember your five days' visit to Mr. Coke's, where you make allusion to his flock of South-Down breed. I had intended pursuing the same course; but the ram will give the constitution and hardiness necessary for this climate. The ewes are most fashionable and finished specimens of high breeding, and may not perhaps stand our severe seasons. Animals, however, become wonderfully acclimated, and, I am inclined to think, *much hardier*, here, after a few years, than they are when imported. Our horses most certainly endure what would kill an English workhorse. The merino sheep suffered much at first, but our present flocks are as healthy as such formed animals can be. And the short-horns of earliest importation do better than those of more recent arrival—of course I speak of the descendants, and not the animals themselves, though these even become hardier. And with these facts, I have thought that when the blood has been kept pure and the stock not depreciated in this country, that the English breeder might make perhaps an importation or an exchange with this country, that would materially add to the hardihood of his animals. The very suggestion may sound like presumption to an English herder; but I pray you to remember that I have reference *only* to the effect of *climate here* on your *own* excellent materials. For instance, Mr. Ellman has sent what he considers a good selection of animals suitable to breed together. Now, I have no doubt that in three, or rather in five years, I shall have infinitely hardier sheep than any in Mr. Ellman's own flock. And I presume I have better constitutioned short-horns than those in England; for though I feed on hay *liberally*, with a few raw potatoes to correct the state of the animal's bowels, yet I never pamper or feed high; and though I house them at night, I turn them out all day on the snow, where they run and frolic with the real enjoyment of animal life. Nor are they pinched or drawn up by our cold and severe seasons, but are straight and upheaded.

"Since my arrival of South-Downs, there seems to be a strong desire to import more; and I have suggested to one gentleman, that he should take his sheep from Mr. Coke's flock, and breed against me; and he so far listens to it as to request I would ascertain the cost of half a dozen yearling ewes, and a buck of his best. Perhaps, should you find time to favor me with a line, you would mention the cost, if you know it.

"Where is Coate's supplement to his Herd Book? I look for it impatiently.

"Very respectfully yours,

———.

"State of New-York, U. S.,
Nov. 1834."

This letter was a private letter, and as such we forbear any extended comment upon it. Under these circumstances we are at a loss to know on what principle the editor could satisfy himself in giving it to the public; excepting as he may have felt himself at liberty to follow the prevalent fashion; for all honorable confidence seems in a great degree broken up, and private letters and letters of the most confidential character are daily, and without compunction, under a new code of morals, given to the public. This letter, it cannot be denied, is sufficiently fanciful to satisfy the most imaginative.

The wintering of the short-horn cow upon a snow bank, under a bleak and most inclement exposure, and her coming out in the same high condition in which she began the winter, does not appear very decisive for the object for which it is referred to, as it seems the cow, though of foreign stock, was a native of the country, and so from her birth was accustomed to the climate of the country; nor is it without good reason that we wish to be informed whether the other young cattle wintered with her came out in proportionally good condition. If they had not, we think the fact would have been stated.

The want of vigor, or power of procreation, in the high bred bulls, is a well understood fact; and a pretty serious inconvenience, as some of us have found to our cost. That this defect is to be attributed to the system of breeding in-and-in is not so well established, though we are not disposed to controvert it; but the "yankee guessing," by which this writer, who certainly is an intelligent man, proposes to trace the effects of this system of breeding in-and-in upon the animal economy, and concludes that "its first effects were perceptible on the frame or bone of the animal, then on the muscles, then on the glands, afterwards on the general constitution, and lastly on the very intestines themselves," can scarcely be considered as any thing else, we design no offence, than pure moonshine.

The assertion "that ——'s stock have been remarkable for their deep milking, more so, I think, than that of any other in the country," is a bold assertion, and one to which we at once demur. It is too late in the day to establish this point by a simple declaration,—we ask for, we demand, the proof; and if gentlemen expect to be believed, they will be prompt to give it. Not long since I respectfully requested of the liberal and munificent proprietors of the improved short horns in this country, to give us some exact and authenticated statements of the produce of their fine cows in milk and butter and cheese. Why do they not do it? It is a matter of easy ascertainment, and the result is of great public importance. I took occasion at that time to give a list of native cows, most of which had come under my own observation, with detailed and fully certified statements of their product. Let the champions and owners of the improved short horns show one like it *if they can*. I for one shall be glad to see it. I have no prejudice against this stock; my prejudices have all been the other way; but I confess myself entirely skeptical as to their value for the dairy. I have some facts in this matter which I shall give to the public, when I think there is occasion. I can only say, that I have had seven of the cows; and there is not a single property in relation to thrift or dairy produce, in which they have been superior, or indeed equal, to other stock in my yard. In respect both to quantity and quality of milk, they have been quite inferior. I have no question that there are very superior individuals among them; but I believe none that have surpassed some of the instances which I gave. As a race, are they superior for the dairy? We will not say we doubt it, but we question it; and we question it in no improper spirit, but solely with a view to ascertain the truth, and that the agricultural public may know how far they may rely upon the representations which are made. If this article should attract the attention of a very intelligent writer for the Genesee Farmer, who, under the signature of *Ulmus*, often gratifies and instructs the readers of that admirably conducted periodical, we wish he would by actual facts within his own knowledge vindicate the claims of a race of animals of which he comes forward as so ardent a champion. We know he is well *read* on this subject, but we want facts under his own accurate personal observation.

That the estimation of the short horns as a dairy stock has very much depreciated in England, seems hardly to be doubted. There is in this very number a notice of Shirreff's "Tour through North America" for agricultural information. Shirreff is spoken of by the editor as "his talented correspondent." He says further of him, that "Mr. S. is a farmer of the first rank, a natural philosopher, a statistician, politician, and a citizen of the world. Few

persons could be better fitted for the task of giving a view of the infant agriculture of America." Yet Mr. Shirreff, in describing the live stock of a farm he visited, says, "There was a fine short horn bull intended to improve the dairy stock, which I did not see. This contemplated improvement originated from perusing the writings of the Rev. Henry Berry of England. I took the liberty of advising the cross to be tried on a small scale, *believing the short horns the worst milking breed in Britain.*"

We are often entertained with the account of Mr. Charles Colling's sale of short horns in 1810; and of the magnificent sale of the famous bull Comet, for one thousand guineas. Why do not gentlemen report some later sales? In the absence of this information I shall take the liberty of giving two accounts of recent date.

"At the Rev. Henry Berry's fourth sale of improved short horns, on the 11th February, 1834, the following prices were obtained:

| | | | |
|---|---|---|---|
| Lot 1, | 2 years old, - | £24 | 3 0 |
| 2, | do. - - - - | 36 | 15 0 |
| 3, | do. bought in, £45 bid. | | |
| 4, | 3 years, do. do. | | |
| 5, | 3 years, - - - | 29 | 18 0 |
| 6, | calf sold with the above. | | |
| 7, | 3 years, - - - | 30 | 9 0 |
| 8, | 3 years, - - - | 38 | 17 0 |
| 9, | 8 years, - - - | 33 | 12 0 |
| 10, | 9 years, - - - | 26 | 5 0 |
| 11, | heifer calf, - - - | 15 | 15 0 |
| 12, | 10 years, - - - | 36 | 15 0 |
| 13, | 10 years, - - - | 48 | 6 0 |
| 14, | 2 years old bull, - - | 39 | 18 0 |
| 15, | 1 year old do., - - | 45 | 3 0 |
| 16, | bull calf, - - - | 15 | 15 0 |
| 17, | do. - - - | 31 | 10 0 |
| 18, | do. nine weeks old, | 32 | 11 0 |

These prices among us of course would be deemed extravagant, but they are evidently below what was expected, from some of the stock having been bought in; and they bear a very small comparison to the prices in Colling's sale.

The present number of the British Farmer's Magazine contains an account of a sale of improved short horns, made on 25th of February, 1835, and the two following days. We quote the sales of the cows and of the bulls.

COWS.

| | | |
|---|---|---|
| Rosette, 9 years old, | 21 | guineas. |
| Fable, 9 do. | 18 | " |
| Vicissitude, 8 do. | 21 | " |
| Vicia, 8 do. | 12 | " |
| Theresa, 7 do. | 22 | " |
| Volumnia, 7 do. | 26 | " |
| Rosalia, 6 do. | 30 | " |
| Pastime, 6 do. | 27 | " |
| Vermeil, 6 do. | 13½ | " |
| Twinkle, 5 do. | 11 | " |
| Valentine, 5 do. | 14 | " |
| Vestal, 4 do. | 9½ | " |
| Vauxhall, 4 do. | 21 | " |
| Violetta, 4 do. | 15 | " |
| Aqua Marine, 4 do. | 29 | " |
| Victoria, 4 do. | 10½ | " |
| Token, 4 do. | 25 | " |
| Fabulous, 3 do. | 31 | " |
| Truelove, 3 do. | 20 | " |
| Imogene, 3 do. | 40 | " |

BULLS.

| | | |
|---|---|---|
| Anur, 8 years old, | 11 | guineas. |
| Ambo Dexter, 5 years old, | 50 | " |
| Ainsty, 3 years old, | 30 | " |
| Tullochgonun, 2 do. | 20 | " |
| Belshazzar, 2 do. | 43 | " |

YEARLING BULL CALVES.

| | | |
|---|---|---|
| Pastor, - - - | 26 | " |
| Roscius, - - - | 50 | " |
| Vulcan, - - - | 43 | " |

BULL CALVES. 1834.

| | | |
|---|---|---|
| Blast, - - - | 29 | " |
| Falstaff, - - - | 18 | " |
| Tommy, - - - | 30 | " |
| Plenipo, - - - | 26 | " |

This sale shows, we think, pretty clearly, a depreciation in the value of this stock, though prices may have been materially affected by local or temporary circumstances, with which we are not acquainted.

The value of the improved stock for beef is a subject upon which I shall not now enter. Two pairs of very superior cattle of this stock were last spring sold in New-York market, which were raised and fattened in Albany. One of the oxen was a very uncommon animal. At some future time perhaps we shall notice this subject more particularly; but we regret to state, which we do upon competent authority, that the reported enormous weight of these cattle was a gross exaggeration. It is said that some English gentlemen, who saw these fine cattle, *condescended* to say that they had seldom seen much finer cattle than these at Smithfield; and they thought, if we continued to progress as we had done, we should presently in the character of our beef equal *their* markets. This was John Bullism "up to the hub." We will take the reports of the Smithfield market; and we have no hesitation in saying that the average quality of the beef cattle sent year by year to Brighton market is quite equal to that of Smithfield, or any other part of the world; and though not so familiar with them, we have no doubt that the cattle of New-York and Philadelphia are fully equal to those of Brighton. Besides most of our stall-fed cattle, at least in the Connecticut valley, are fattened upon Indian meal and the very best of hay. Most of the English beef is made of straw and turnips; which can never produce so fine beef as the feed which we are accustomed to give them. H. C.

Meadowbanks, July 10, 1835.

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*Scenery along the Banks of the Hudson in the town of Greensburgh.* By S. F. [For the New-York Farmer, and American Gardener's Magazine.]

On leaving the city of New-York, and sailing up the Hudson, there is, for the first fifteen or eighteen miles, little to animate the eye or interest one who is familiar with the scenery, although the stranger looks upon the lofty palisades as one of the wonders of the western world. These lofty and perpendicular rocks wholly exclude a view of the country on the west, and the rocky shore on the east affords a very limited and unvaried prospect. But after passing the thriving village of Yonkers, the palisades rise to their highest elevation, and then abruptly break off and open to view the varied and celebrated mountains of the highlands; and here, too, the majestic Hudson spreads out into a wide bay, as if to join in displaying the beautiful and the grand. The shores, particularly the east one, affords a great variety of aspect and scenery: abrupt and gentle sloping banks, hills and plains, woods and cultivated fields. There are several locations, twenty or more miles above the city, from which can be seen the flowing current of the Hudson in its full breadth as far as Jersey City, the bay of Tappan, often enlivened by fifty to a hundred or more vessels, and the mountains of West Point disappearing in the azure of the heavens. No where in this section of our country is there so great a combination of the bold and the beautiful in scenery, and so many circumstances that would induce those of wealth and taste to seek hither at least a summer residence. No country abounds in better and more numerous springs, and yet no stagnant pools are to be found. The soil, in the town of Greensburgh particularly, is a sandy loam, securing filtration and easy culture. The substratum is rock, which arrests the water until it breaks out in cool and pure springs. These rocks often rise above the surface of the ground, and to him who has been familiar with only level and rich meadow lands, they present a forbidding appearance, but not to him who knows the enchanting power of art and what is requisite to a healthy residence.

The incidents that occurred in this and the neighboring towns during our revolutionary war give interest to this section of country. Here was neutral ground, and here can be shown, among other celebrated spots, that on which the eventful capture of Major Andre was made. Here can be heard from the aged, thrilling narrations founded on fact and derived from fruitful imagination. Here the author of Knickerbacker, whose present residence is not distant from "Sleepy Hollow," gleaned many of his remarkable stories.

In the next number of the Farmer I may give some account of the operations of those who are increasing the productiveness and beauty of the town, and affording new inducements to invite the stranger.

July 10th. S. F.

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*On Cutting Grain when Green.* By H. C. [For the New-York Farmer, and American Gardener's Magazine.]

"A land owner in Perigeux, in France, has recently discovered that corn (wheat) cut rather green is considerably more productive than that which is suffered to stand until fully ripe. It arose from the following accident. A quantity of corn having been laid, (lodged,) he ordered it to be cut, bound into a sheaf and set apart. When the field was ripe and reaped, he took another sheaf of equal size, and had them both carefully threshed and dressed separately. The sheaf of green corn (wheat) produced five pecks weighing 35 lbs., and the ripe corn produced only 4¾ pecks, weighing only 27¾ lbs. The 35 lbs. made into white bread weighed 36¾ lbs., while the bread made from the 27¾ lbs. weighed only 26¼ lbs., and was of second quality."

It is said, but I am not able to adduce

the authority, that Mr. Coke, the distinguished farmer of England, is in the habit of cutting his wheat green, and that the flour is in such cases of a better quality. It is difficult, from such general accounts, to determine any thing with precision. Rye is said by the farmers in this vicinity to be much better for being cut rather early than late; but wheat may be cut too soon. I believe the best rule is not to cut it until the stalk is perfectly dry under the head; but when the proper time does come, it cannot be secured with too much despatch, as there is not only the danger from the weather, but much grain will be shaken out in the gathering and transportation, when it has become very dry.

In 1833, having lost by blast a most promising field of winter wheat, and fearing a blast upon my spring wheat, I caused the latter to be cut while the stalk was still green and the grain still in the milk. Upon curing it, the grain was much shrivelled, though the flour made from it was excellent, and the amount of crop, I have reason to think, was greatly lessened. The straw, however, proved almost as good fodder as herds grass. H. C.

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*On Saxony Sheep.* By H. COLMAN. [For the New-York Farmer.]

The July number of the New-York Farmer contains an article from Mr. Henry D. Grove, of Hoosic, New-York, in reply to a communication in the Cultivator, over the signature of R., on the subject of sheep. We have not the pleasure of knowing who R. is, even by name, but the editor of the Cultivator speaks of him as a "gentleman pre-eminently distinguished as one of the best judges of stock, and withal an extensive breeder." With Mr. Grove we have the pleasure of an acquaintance, and though unused to the language of compliment, we hope it will not be deemed indecorous to say, that there is not a more inquisitive and practical farmer in the country, nor a more exact, skilful, and, for his age, experienced shepherd. Brought up from childhood in the care of the best flocks in Germany, having engaged to the extent of his means in the raising of fine-wool sheep here, enthusiastically devoted to the pursuit, and relying on his success for a just compensation for his enterprise, expenditures, and labor, it is not surprising that he should feel concerned at the sweeping condemnation which R. has seen fit to cast upon his favorite race; and knowing the habits of our people, to go in mass as accident or caprice may lead them, and the natural influence which opinions so solemnly and confidently given, and so strongly backed by recommendations from high authority, must have upon his interests, and the interests of all the holders of Saxony sheep, we deem his reply in every respect manly and proper—we were about to add, conclusive; but this we will leave to others to add when they shall have had further testimony on the subject.

"The Saxon sheep, (says R.,) undoubtedly produce the finest wool; but their fleece is light, seldom exceeding 2¼ lbs. in weight, and is too open to resist our storms. *They are feeble in constitution, require great care, are poor nurses, and their lambs are raised with difficulty.* The mutton from such sheep must necessarily be of a miserable description."

Again, "The farmers are now aware of their error in using the Saxon cross, *which has ruined the constitution of their flocks, decreased their clip of wool nearly one half, and reduced their produce, until, with ordinary management, more than twenty-five lambs to an hundred ewes are seldom raised.*"

Again, "I corresponded with others, and found the introduction of the Saxony blood was universally followed by a decline of constitution, and all its attendant evils."

These are strong and wholesale assertions, made most certainly with no ill design; but without a just consideration of their force; and, as far as our own knowledge goes, unwarranted by facts. R. surely would make no intentional misstatement or inference; but his experience has been unfortunate. We will not even suspect him of any interested motives or prejudices founded upon such motives, though he is a seller of South Down lambs, and a letter of South Down bucks; but we have a right to say, that the abused Saxony are not answerable for any injury they may have suffered from ignorance, neglect, or harsh treatment, want of skill, or want of judgment, on the part of those who kept and bred them.

R., with a candor which does him honor, admits, that a "gentleman in Oneida county, who had first purchased a flock of Saxon merinos, assured him, that in Oneida county they were a hardy, healthy sheep, shearing on an average about 3 lbs. of wool; and *the purer the Saxon blood the heavier was the fleece.*"

We have next on this subject the testimony of Mr. Grove, which I shall take leave to repeat in this place. "During the last eight years, and since I had a farm of my own, I have not lost over 1½ per cent.; for the last year not more than one per cent. The last two winters I had no loss, and the last year I raised 101 lambs from 100 ewes, one only of my ewes having had twins. My sheep last year of 200 ewes and lambs, averaged 2 lbs. 6½ ozs. If I had had a proportion of wethers, they would probably have averaged 3 lbs. My grown bucks sheared 4½ lbs. My ewes are uncommonly good nurses." Mr. Grove's flocks are of pure unmixed Saxony.

To these testimonies I take the liberty to add an extract from a letter received from a distinguished sheep owner in Berkshire county, Mass., dated 17th of February last; his sheep, likewise, are of the purest Saxony; and no finer wool can be found than some of which at the same time he sent me a sample. "I pluck out a few samples of wool for your examination, thinking you will examine it thoroughly, as it is a specimen of my flock of sheep of similar grade of wool. My flock consists of about 600 in number, that I keep on my farm, with three or four hundred out, kept by other wool growers. I should like to have you get any man in the New-England states to examine the samples of wool I send you, who are judges of wool; and if they will produce better wool, I would burden you with the trouble of forwarding me samples of such wool, and let me know who are the growers of it, and where they live. My ewe sheep, that are of the second fleecing and upwards, give me the average cutting of good merchantable cleansed wool, from one year to another, about three pounds. My one year old sheep average about two and a half pounds per head. I keep no wether sheep on my farm. My flock consists of ewes and buck sheep, which are taken from me to different sections of the country."

I have shown the above samples to some of our first judges of wool; they pronounce it to be of the highest quality. The proprietor has a standing offer for his wool, at 80 cents a pound for several years, whenever he chooses to dispose of it at that rate. I was at his farm in June, and though the severity of the season has been unexampled, yet he assured me that from one flock of his sheep placed out to be kept on certain shares, consisting of 125 ewes, he had raised 124 lambs.

I subjoin two other letters received from respected correspondents, whose authority, if I were at liberty to mention their names, would be decisive in all the points to which they refer.

"———, July 13, 1835.

"REV. HENRY COLMAN: Dear Sir,—Your letter of the 10th inst. is received. I think the writer, who, you observe, has made a severe attack upon the Saxon sheep, will be more reasonable when he becomes better acquainted with the subject. If the gentleman will take the trouble to call on the fine wool growers of this place, with a view to obtain information in regard to Saxon sheep, he will, in my opinion, go away satisfied that they were a very delicate and healthy race of sheep, good nurses, and when under the care of a skilful shepherd, seldom raise less than ninety-five lambs to a hundred ewes. I have this morning inquired of the most experienced shepherd in this place how many lambs could be raised from 100 prime, full blood Saxon ewes; the answer was, all of them.

"In regard to the mutton of Saxon sheep, I have no doubt of its being equal to mutton of other sheep; but who in the United States, except the writer you speak of, ever thought of butchering a Saxon sheep? As respects crossing the South Down with the merino, would it not have been more modest in the gentleman to have said nothing about the Saxon sheep, but to have tried the experiment, and when he had obtained the wool, have taken the opinion of skilful manufacturers on the subject; and after he had been fully convinced that he had produced a very hardy race of sheep that would give about four pounds of wool at a shearing, quite as soft and fine as the Saxony wool, and mutton of a superior flavor, then have made a statement of facts?

"The answers to your inquiry respecting the time that I commenced keeping sheep, &c., are as follows: I commenced the business in the year 1824; the average yield of wool has been about 2 lbs. per fleece. I think there has been no year since I commenced the business, that my Saxon wool would not sell for one dollar a pound; and it has in no instance been

sold for more than one dollar and fifty cents per pound. In regard to their hardiness, I think them rather more tender than the merino sheep. I am, sir, respectfully, &c.

"——— ———."

The flock of the above gentleman is among the finest in the county, and the skill and care with which they are managed, as I know from personal observation, cannot be surpassed. His number is about 800, and his flock the *last year* averaged three pounds of wool to the head; I have not the amount for the current season.

I have another letter from an esteemed friend and correspondent, which will be read with interest.

"———, July 13, 1835.

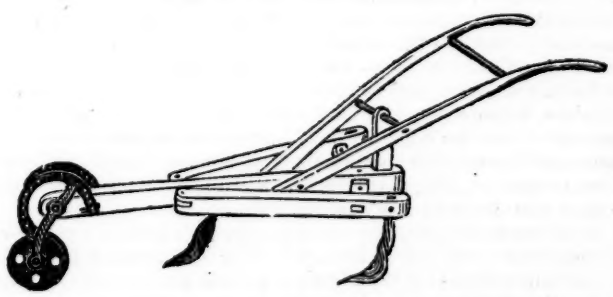
"Mr. Colman: Dear Sir,—On the receipt of your favor of the 10th, (which did not come to hand until to-day,) I called on one of our largest wool growers, a gentleman probably better qualified to give correct information respecting the character of the Saxon sheep in this part of the country, than any other one in New-England. The gentleman alluded to has a choice flock of pure Saxon sheep, considered by judges one of the best in America; and his stock has been sought after, and his wool has commanded the highest price. As he has received a communication on the subject, I believe he intends to forward some statements to you. I would, however, mention a fact relating to one of your questions, stated by Mr. ——, that his ewes are *particularly good nurses*, which seems to be corroborated by the statement of one of my neighbors, Mr. L. R., who is largely in the Saxon sheep, (he keeps about 1000.—H. C.,) and has been very successful in raising lambs. I have not had an opportunity of seeing him since I received your letter, but am knowing to a fact, that one flock of his this spring (of near an hundred) raised every lamb except one, and that was killed, owing to a deformity.

"I regret that I am unable to make no more inquiry before the mail closes, but can state what I think—that the flocks in this vicinity are generally those raised from a cross between the merino and the native sheep, and since they have been crossed by Saxony; the average weight of fleece is from 4 to 8 oz. less than formerly. I have used Saxony bucks every year, except two, since their importation. My wool averaged last year about 2 lbs. 12 ozs.; this year 2 lbs. 7 ozs. Such wool as mine last year brought from 58 to 65 cents, and this year from 70 to 76 cents per pound. There is one thing, however, to be remembered: much more pains are now taken than formerly in cleansing wool; perhaps there is no place where wool is put in better order for market than just in this vicinity. There is another thing: when the Saxon sheep were first introduced, they were selected for the fineness of their fleece, without any regard to shape; the consequence is, many flocks are not so hardy and handsome as they otherwise would be, had proper care been taken in selecting good bucks. I have not seen the article to which you allude in the New-York Farmer (Cultivator), but will venture to advise the writer, if he is a bachelor, not to be too hard on the poor Saxonies until he has his wedding coat made.

"With great respect, &c. ———."

Such are some of the testimonials which I have obtained from perfectly competent and credible witnesses, and which I beg leave to offer in arrest of the terrible judgment which R. is disposed to pronounce on the defenceless race of Saxon sheep. Let them have fair play, kind treatment, abundant food, proper care, and under a judicious selection, there cannot be a doubt that they will prove a most valuable, healthy, and profitable stock. We have nothing to say in derogation of the excellent qualities of the South Down. We believe them to be a most valuable race of animals, and rejoice in their introduction. Their yield, according to Loudon, who expressly refers to Ellman's South Downs, is from 2½ to 3 lbs. The Rev. H. Berry, whose authority as a breeder we think R. will readily admit, says, "that Mr. Coke, by crossing with a Hampshire sheep, has produced a flock differing from pure South Downs, *only in these particulars*, namely, in the possession of a more *useful* frame, a description comprehending much that is highly important, a superior quality and quantity of wool, and a greater quantity of mutton, particularly distinguished for a sufficiency of lean meat per acre; and he has not in the least sacrificed the early maturity of the South Downs." It would seem from this that the South Downs themselves admit of considerable improvements. Another writer in the B. Farmer's Magazine, whose letter is quoted at large in this paper, and whom we suspect, from some verbal coincidences, to be the identical Mr. R., says, "I have just received from J. Ellman's flock a fine stout large yearling ram, and judging from this animal I should think he has regained *the vigor and constitution which were so deficient in his late father's flock.*" So it seems, that even J. Ellman's South Downs have been notoriously deficient in *vigor and constitution.* In the report, likewise, of the Committee of the Highland Society on Live Stock, dated 30th of January 1835, which is given in the last Edinburgh Quarterly Journal of Agriculture, a most able essay, they remark, "Admirable as this breed (the South Downs) is in the Downs of the southern counties, and in various districts of England to which it has been carried, *it appears to be very partially adapted to the circumstances* of Scotland. Wherever the South-Downs should be cultivated in Scotland, the New Leicester could be reared; while, for a mountainous country, it does not possess the hardy properties of the native breeds." This is authority, certainly, to which there can be no demur; and if the South Downs, with this acknowledged tenderness of constitution, can be so readily acclimated as to bring forth their lambs in safety in an open yard, in the month of March, with the glass at 6° below zero, and "never show the slightest consciousness of the intensity of the cold," may we not hope that by equally careful management, the tender Saxons may at last acquire some proportional hardiness of constitution; and if they will give us 95 lambs to 100 ewes, and 2½ or 3 lbs. of wool, at from 80 cents to 150 cents per pound, may they not have some humble claims to our forbearance, if not our good will; at least, until the supply of the promised improved stock is ample for the wants of the country? H. C.

Meadowbanks, July 15, 1835.



*Bement's Improved, Triangular, Expanding Cultivator, or Horse Hoe.* [Communicated for the New-York Farmer, and American Gardener's Magazine.]

The above drawing is taken from one made for Mr. Bement's own use, with only three shares or teeth, and made very light, to be drawn by a small pony. The usual size has three shares and two scarifiers. The shares are double pointed, having one point at the top and another at the bottom, and are attached to the stock by a small screw-bolt and nut in the middle, so that when one point breaks, or is worn out, by turning the other end down, a new point or share is presented. A larger or smaller share may also be attached to the stock as occasion may require. The shares may also be replaced by scarifiers.

By the peculiar construction of the clevis, the roller or wheel, and with it the beam, can be regulated to any height required; and by raising or towing the hook, the line of draught can be adjusted accordingly. The sides may also be set wider or narrower, to suit any occasion.

In putting in such grains as are proper to be ploughed in, as barley, oats and peas, the larger shares may be used. The shares can be replaced by scarifiers, which are useful for cleaning out quack and other troublesome weeds, as well as scarifying meadows, previous to a top dressing of manure.

This cultivator or horse hoe is, in proportion to its cost, perhaps as valuable an implement as can be had on a farm, serving, as it does, a variety of uses, and being in

all cases light and convenient to use; and I should think by the number of orders Mr. B. is receiving, it is coming rapidly as well as deservedly into use.

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*Agricultural Conversation,*——continued from page 145. By FARMER C. [For the New-York Farmer, and American Gardener's Magazine.]

P. S. Well, F. C., this is singular weather for the season; for more than three weeks we have not had a single day suitable for ploughing, and I presume there has not been a handful of grain sowed in town during that time. Rain, snow, hail, wind and thunder, all in the same hour. I feel discouraged. Now what can be done in such weather?

F. C. The weather is bad to be sure, but "He who guides the whirlwind, and directs the storm," has promised, that "while the earth remaineth, seed-time and harvest, and cold and heat, and summer and winter, and day and night, shall not cease." Now, we must abide patiently. Suppose your peas, barley, and oats, had been sown three weeks ago, not a single grain would have sprouted: would they not have been better left in the granary? We should never be so much in a hurry to finish our contemplated work as to plough or sow in cold, stormy weather. This disturbing ground while it is wet, both injures the land and crop materially. "Plough naked and sow naked," is an old Roman maxim well worthy our notice, (see Virgil, Geo. Lib. I, 299: *nudus ara sere nudus;*) and we should wait till the weather is so warm that we may lay off our coats and even vests at seed-time. That grain grows most luxuriant which germinates and springs up directly after it is deposited in the earth. If the storm drives us in doors we must be employed at something. We can see that our harness is well mended, our hoes well handled, our rakes, forks, scythes, and all tools, in good order for use. We can fit posts, make gates, and a thousand things which may be done while it storms; when the fair weather comes they will be all in readiness. How vexing it would be on a fine sunny morning, when all hands were ready for planting corn, to direct a man where to find a hoe or two, and have him return with the tidings, "your hoes all lack handles." Depend upon it there is always enough to be done even in stormy weather.

P. S. When we had our last conversation, we closed on the subject of the utility of agricultural societies. I do not feel fully satisfied on that point, nor can I so long as I see so many who never have been, and never will be, members of an agricultural society, and who have the credit of being good managers and successful farmers.

F. C. Perhaps they are prejudiced against them. This inclination to place a high value on our own opinions, practices and perfections, and to set at nought those of others, is one of the most prolific sources of error and delusion in any branch of science or business, and is also one of the greatest and uncontrollable clogs to agricultural improvement. We sometimes find whole districts presenting this unconquerable objection to any change in their mode of husbandry, considering all innovations on the practices of their forefathers as unwise, profitless, and absurd. If any new improvement is announced, the propriety of adopting it is not examined, and it is rejected, for no other reason than that it is new. A patient hearing, or a careful examination of its merits, cannot be had; hence they deny its utility and condemn its importance. We find that, by looking back, all great improvements have been introduced and brought into notice by a few men who have been willing, for the general welfare, to exhaust their riches, impair their health, and suffer even persecution. Now, in order to subdue this prejudice, we must be willing to *examine* things as they rise, not be too hasty in forming our opinions, weigh carefully every doubt and difficulty, and even, after a thorough investigation is had, and a *probable* right opinion from the circumstances before us is formed, we should not be so tenacious as not, when it is found *certainly* to be erroneous, to recant it.

P. S. I am well aware that prejudice exercises great influence over the minds of men, and to be entirely divested of it, is nearly impossible. Do you suppose a man's merely joining an agricultural society, will make him a better farmer?

F. C. That simple fact, taken alone, can have no influence, more than whispering to the wind. It is the direction he receives from its various transactions that is to improve his condition. If he is no more than a nominal member, he does not take advantage of whatever there may be presented; if he remains a heedless spectator of its proceedings, and an idle drone in following its suggestions, he is very far from becoming wiser through such institutions. He should be determined and prepared to improve on the faults as well as success of others; he will soon acquire an easy habit of gaining an honest, long-wearing sort of riches, and a knowledge of what other people are about.

P. S. Why do some, who are not in favor of agricultural societies, make greater progress than some who always speak in their praise?

F. C. That is not the case. Take the first, wealthiest, most intelligent, and most successful farmers in the country, they are nearly to a man in favor of these associations. There may be many who are friendly to them, but who have not the means and ability for grasping successfully all the advantages presented. From this I presume you will not deny their general usefulness, or support the assertion, that they are foolish and expensive.

P. S. Certainly not. I am persuaded their usefulness is extensive, and should wish them to be formed in every section of the country. Now, after all we have said, do you suppose the subject of "systematic agriculture" is fast gaining ground in this part of the country, and what has been its progress for years past?

F. C. When the first settlers commenced their farming operations here forty years ago, they encountered many difficulties, and were obliged to submit to many privations. The soil was to clear of a heavy growth of timber, and disease common to emigrants in new countries and climates did not spare the pioneers of this favored spot; but to repay them for their toil, their disappointment and distress, they found a soil, deep, rich, and productive in the highest degree, their hide-bound pockets began to thrive, and in place of the sturdy wilderness was seen the golden grain bending for the harvest, its slender stalks crackling in the sunshine, the tall grass waving in the breeze, and the green pastures, speckled with bleating flocks and lowing herds, bearing true testimony to the industry of the farmer and fertility of the soil. Any man with little ingenuity and practice may clear land, raise grain, cut hay, rear stock of all kinds, while his lands are new and rich; but, by continued cropping, the virgin fertility of the soil becomes exhausted, the stock of nourishment for plants, which has been accumulating for ages by the yearly decay of vegetables, is at length spent, and, unless something is made to supply the place of what has been extracted, it would be useless to proceed. It has been the practice of many of the early settlers to crop the same field year after year till the virtues of the soil were well nigh wasted, and the consequences have been, in many instances, that the produce of such fields would not be sufficient to maintain the man and his team while performing the preparatory labor. Such a course is indeed ruinous and needs correction. Very many have been induced to move to Ohio, Michigan, or Illinois, perhaps to practise the same course there. Whereas, if they had known their true interest, applied the proper restoratives, or avoided the ruinous practice of continual cropping, they would have kept rich farms here, and not been necessitated to carry the oft-told tale to the western world, that "Onondaga is an old worn-out county." There is not a more rational principle in the whole code of agriculture, than "that every farm in good heart should be kept so, and every farm not in good heart should be made so." Any system, therefore, or want of system, which tends to make a rich farm poor, or does not tend to make a poor farm rich, should be abandoned, as it cannot be of much lasting advantage to the owner; whatever the immediate profit may be, it cannot balance the loss of intrinsic value sustained by the land. By good management, one acre will produce as much as three not *managed*, and with far less injury to the soil. A Roman writer on tillage (Columella) tells us, in a story of one Paridius, of the obligation to productive management; with considerable force he says, "Paridius had two daughters, and a vineyard; when the first was married, he gave her, as a portion, one third part of the vineyard, and the

produce of the remaining two thirds was, with the same labor, equal to what the whole produced; when the latter was married, he gave her half of what remained, and yet his crop was not at all diminished," which goes to prove, that by attention and good culture, a little ground may be made to produce as much as a great deal. I am candidly of opinion, and state the fact with great satisfaction and unbounded confidence, that the foundation of "systematic agriculture" has been deeply laid in a *knowledge* of the soil. Its purposes are progressing in the economy of vegetation, the nature and application of manures, and in the rotation of crops; and the farmer who does not keep pace with his neighbor, as respects agricultural improvements and knowledge, will soon find himself growing poorer for the increased prosperity which surrounds him; he will soon be found treading the down-hill road of adversity, and many are the chances of his ending his days in the vale of poverty and distress. Then we will say with one voice, to the careless and inattentive husbandman: awake you that sleep, and open your eyes to the light that so brightly shines throughout the land, and not remain, like the stinted tree in the forest, deprived of light and air by its overtowering neighbors. FARMER C.

Manlius, 28th April, 1835.

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*Six Weeks' Ramble in the Northern Part of the State of New-York.* By S. B.

[For the New-York Farmer, and American Gardener's Magazine.]

All nature appears to subsist by a spirit of constant mutation. The planetary system is constantly wheeling in endless evolutions; never returning to the same relative situation. The earth is not only going its rounds in the great dance of nature, but is constantly rolling and changing sides on its own axis. It is in perfect keeping, then, that the inhabitants of the earth should change, as we find them constantly doing, throughout the animal world.

But the changes in animated nature are most observable to us in our own species, with which we are, or ought to be, best acquainted. We find man, as we go from place to place, or as we pass through different periods of time, changing in character, in disposition, in taste, in dress,—in short, changing in every thing. What he approves and admires in one century, he disapproves and abhors in another; what he believes at one period, he utterly disbelieves at another; and what was considered wisdom two hundred years ago, to-day is downright folly.

In the early part of the last century, and in the century before it, for a man to have offered the world an account of his travels without a catalogue of wonderful, and even incredible things, would have been considered perfectly ridiculous. He must have seen something which nobody ever saw before, and which at least bordered upon the miraculous. He must have passed through shipwrecks and hair-breadth escapes; and he must have associated with lords and dukes and kings and emperors. No man of sense would then spend his time to read about people who were just like other folks.

But the minds and tastes of people have now so far descended from this lofty style, that many are willing to turn their attention to things that appertain to the common affairs of life. There are not only in every country, but in different sections of the same country, many little peculiarities, which, though in themselves not at all wonderful, may be very interesting to a person who wishes to know the world as it is, and who prefers the useful to the marvellous.

To know the geological description of different parts of the earth; to know the peculiarities of the soil and its productions, and the modes made use of in cultivating it; and still more especially to know the manners and character, and the social and civil improvements of the inhabitants, are objects which, strange as it may seem, are by many people of good sense now considered not altogether unworthy of notice.

Under the influence of these impressions, and having a desire to know something of that section of the state of New-York which lies north of the great thoroughfare from east to west, and between lake Champlain and a little past the east end of lake Ontario, a tract which has seemed hitherto to have almost escaped public notice, I set out about the latter part of October last, from the neighborhood of Albany, determined to know whether this part of the terraqueous globe was composed of land and water, like other places, and whether it was lighted by the same sun and moon which illuminate the middle and southern parts of the state. How far this peregrination was connected with the concerns of worldly mammon—whether I travelled in the character of a tin pedlar, a philosopher, or a wandering pilgrim, as I feel under no particular obligation to inform the reader, I shall not condescend to do it. The modes of conveyance I made use of were nearly all that are practised in Christian countries, except being carried by a balloon. Sometimes in the public stage, sometimes in a steamboat; at times in a canal boat, and at times by a hired private conveyance; if invited to take a spare seat in any decent vehicle, I was not too fastidious to accept it; and being somewhat fond of pedestrianism I occasionally, when I could send forward my little baggage, amused myself with exercising the motive powers given me by nature.

I set out on Friday; not, perhaps, paying due regard to the predictions of my good wife, that the journey would in consequence prove unlucky. Taking the northern stage, I arrived early in the afternoon at Stillwater, and here I was almost led to doubt the doctrine of constant and universal mutation, for having known this place some dozen years ago or more, I could not perceive the slightest indication of change, except some rather equivocal signs of dilapidation, for I could not positively decide, though it wore a kind of Rip Van Winklish appearance, whether it was not exactly so when I saw it last. I found the village, however, connected with the opposite shore of the Hudson by a new and handsome covered toll-bridge. This is, no doubt, a convenience to the inhabitants and to travellers; but I should have doubts of its being very profitable stock to the owners; fortunately, however, for me, this is their business, and not mine.

Having a little business with a man who, I was told, lived about four miles south-west from there, I left my trunk, and set off for an afternoon saunter, calculating to obtain lodgings where night should overtake me. I arrived at my place of destination some time before sunset, having viewed all the farms as I passed them, and picked up my pockets full of shagbark nuts, which, like old Mr. Burchill's ginger-bread, in the "Vicar of Wakefield," procured me a welcome among the children. The gentleman was away from home, engaged in an arbitration, and was not expected to return until late; but I was kindly invited by the good lady to stay all night, which invitation was rendered the more acceptable, as she had a little neighborhood tea-party, of what appeared to be married ladies, and who seemed able to find interesting topics of conversation without the aid of scandal. Now, my taste is altogether so destitute of fashionable refinement, that I would give much more to hear, and join in such a conversation, than to hear a political harangue from the greatest stump orator in the United States.

The conversation at the tea-table and afterwards, turned on family government and the education of children, particularly females. This is to me the most interesting of all subjects; if it is skillfully touched, my whole soul vibrates in unison with it. One of the ladies, a Mrs. S., who, I understood, lived on the opposite side of the way, appeared to have given it that attention it well deserves from every female head of a family, and I was pleased and edified by her remarks. At the dusk of evening, she, with the other visitors, withdrew, and soon after Mr. S. came over to invite me to his house, but, as I had business, I declined, promising to give him an early call next morning. He staid the evening, and his conversation showed a mind of strong intellect, improved by industrious and judicious cultivation.

At near ten o'clock the gentleman of the house returned, and after finishing my business, before retiring, we held a discourse of some length on agriculture. He had a farm of between two and three hundred acres, of good land, beautifully situated, but certainly susceptible of, and much needing, immense improvement. He had some idea of the improvements of which farming begins to show itself susceptible, when conducted on scientific principles, and regretted that he had not funds to make them. I endeavored to convince him that to make the improvements was the surest way to procure the

funds: that even if he had to mortgage a part of his farm to obtain means to fence and manure it, to cultivate fruit trees, and to procure improved live stock, his increased profits would soon enable him to cancel his mortgage. But he seemed like a new fledged bird that wishes to fly, but is afraid to make the attempt. His farm was now in better order than those around him; and no doubt he had some fear of the soul-freezing effects of ridicule, should he deviate from that ancient mode of farming which was established by the venerable forefathers of the place, and has continued with as little alteration as the beautiful village of Stillwater.

I called on Mr. S. next morning at sunrise, and after the morning devotions of the family, which were performed and attended in a style of unaffected sincerity, I sat down with him and resumed the thread of conversation where we left it the night before, which was upon my favorite topic of agriculture, and which seemed to be scarcely less so with him. He had lately taken a temporary residence here on hire, while he could suit himself in the purchase of a farm. He seemed to be designed as one of those brilliant luminaries which science is here and there lighting up to exhibit to view those beauties of long-despised agriculture, which have lain hidden, since time began, in the gloom of mental obscurity. After an excellent breakfast I took my leave somewhat reluctantly from this interesting family.

Taking a more southern road than that by which I came, I resumed my pilgrimage towards Mechanicville, indulging myself, if it could be called indulgence, in the pain of contemplating an uninterrupted succession of farms for miles together, of naturally good land, but seeming to excite the very breezes which blew over them to sigh in mournful sympathy at their want of cultivation. I have no doubt the owners of them are industrious men, and perhaps think they are excellent farmers; but on the latter point I must beg leave to differ from them in opinion. They will plead that the exact course they pursue has had the sanction of successive generations, from the remotest antiquity within their knowledge; that if their farms are not as productive as some others, it is because they are worn out and they cannot help it. They cannot afford the expense of manuring and fencing and draining, and perhaps setting out fruit trees, and all those new-fangled notions; it is enough for them to farm it as their fathers did.

About noon I reached Mechanicville, a small but thriving village on the west bank of the Hudson, which has grown up from the water privileges of a small stream, called Anthony's Kill, which here enters the Hudson. Here is a handsome cotton mill, erected on the scite where one was burnt a few years since, and appears to be respectably conducted. There are also some flouring and plaster mills, and several other hydraulic and manufacturing establishments. After viewing these, I returned in the evening to the inn, in Stillwater, from whence I departed the day previous.

It was now Saturday night, and rain began to fall, and continued almost incessantly until Monday night. Tuesday morning I went on board a canal boat, and at twelve o'clock reached Schuylerville. This distance presented nothing to view, in sight of the canal, worthy of notice, but almost the whole of the way is rendered sacredly classic, by scenes of the revolution; and I found, even with the boatmen, every part of the history from the meeting of the American army with that of Burgoyne on the plain, to the surrender of the latter, was familiar with them as household words. I had some years before viewed the whole ground, accompanied and instructed by an aged veteran, who was an actor throughout the scene; and who gave me a minute and much more interesting history of every transaction, than ever came or can come from any pen. He pointed out the ground and the relative situations of the two armies on the plain. He conducted me over the road cut by Burgoyne's army through the woods, by which they reached the heights; and described the subsequent encampments of the two armies, and the battles of the 19th of September, and the 7th of October, with the death of General Frazier, and all the intermediate events to the surrender, on the ever memorable 17th of October. One circumstance which the old man retained, I cannot for the honor of human nature omit.

A few years before my visit there, the place had been visited by a party of ladies and gentlemen from the south. Some of the bones of a soldier, known from some circumstances to have been an American, had lately been deprived by the elements of their shallow covering, and a few of them were lying where he conducted the company over the battle ground. One of the ladies, with tears in her eyes, said she could not bear to see the bones, even of a favorite chicken, lie unburied and bleaching above ground, much less than of a human being, who had fought and perished in defending the liberties of his country, which she now enjoyed. And in spite of the remonstrances of her companions, she went to work and with a stick scratched a hole in the soft earth, large enough to receive the bones, and buried them. A tear of satisfaction glistened in the old man's eye when he told me the story, and I am not certain but mine contained a portion of similar moisture. I then visited the house where General Frazier expired, and marks of his blood were then still visible on the floor; and the house and scenery around it are rendered still more interesting by the affecting account given by General Burgoyne of the conduct of Mrs. Harriot Ackland.

But I have digressed so long that I had almost forgotten that I have just arrived at Schuylerville. This village lies on the west side of the Hudson, near the junction with it of the Fish Creek, and like Mechanicville, has sprung up by means of the facilities afforded to manufacturing establishments, by the falls of the last mentioned stream. The village affords nothing peculiarly calculated to please the eye or the mind, except the beautiful seat of the late General Schuyler, whose name is inseparably connected with the history of the revolution, and a very handsome and apparently well managed cotton manufactory. The latter, from its elevated situation, and the large elegant enclosure before it, covered with rich verdure, has more the appearance of a college than a workshop.

In the afternoon, happening to meet with an old and valued friend, I accepted his invitation to pass the night with him and his family; and in the morning, on my inquiring if there was any mode of conveyance to Saratoga Springs, a young gentleman, with a light waggon and handsome span of horses, said he was going directly there, and would be glad of my company; and from what I have already informed the reader, I scarcely need add that the invitation was gratefully accepted. I found, by conversing with this young man, that his father was a wealthy farmer in the county, and that he had recently commenced business on his own account, on a farm of between two and three hundred acres, near the west bank of the Hudson, well stocked and furnished. His inclination to adopt improvements, while under his father, had been somewhat checked and restrained; though he had tried some pretty important experiments, and always with success. And now that he was under no control, he seemed determined, and I think with strong probability of success, not to be behind his neighbors in the spirit of agricultural improvement. He had a project which, as respects this country, I believe had novelty in its favor; and I see no reason why it should not succeed. He had ascertained, from elaborate experiments, the precise quantity and value of food required to feed hens, and he found it fell considerably short of the value of the eggs they would lay; and he had made preparations to keep a thousand hens, and was now going to Saratoga Springs to make arrangements for the sale of the eggs. The pleasure I took in his company made me almost sorry the road was so short.

We arrived at Saratoga about noon. I had visited this place about twelve years before, and, as far as I could judge, the size of the village had a little more than doubled in that time; and though not the season of company, it appeared to be a place of considerable business.

After dinner I took the railroad for Ballston. Next morning after breakfast, as I saw nothing in or about the village to attract my attention, I set off to visit the seat of Mr. W. G. Verplanck, to whom I had a line of introduction, and from whom I promised myself the pleasure of making some improvements in my little stock of knowledge on farming. But, unfortunately, he was gone to New-York, and so my anticipation changed to

disappointment. I saw enough, however, to convince me that there would have been no disappointment, had Mr. V. been at home. I next visited a little secluded, but apparently industrious and thriving manufacturing neighborhood, about a mile and a half north-west from the village of Ballston; and returning to the village, I took the railroad to Saratoga. In taking an early walk next morning, I saw an elegant mansion, about a mile north of the village, with a stately piazza in front, supported on columns, built with brick, and plastered in imitation of marble; but though the house, as I was told, had been recently built, the plaster was falling from the columns, leaving them in a more ragged looking state than a poor colt shedding its coat after a hard winter. After breakfast, the innkeeper where I had stopped sent a man with me back to Schuylerville, and from thence he carried me to Union village, on the east side of the river. From this village I proceeded the same evening to Cambridge.

From Cambridge I passed to Salem, and from Salem to Granville, in the stage. From here, by a private conveyance, through Hartford to Sandy Hill. Throughout this route, it would be difficult to convey to the reader any thing like an adequate idea of the stupendous wonders of nature and art that presented themselves to view. The exquisite displays of horticulture and gardening, the farms exhibiting all the luxuriance of scientific cultivation, and the beautiful specimens of architecture, no pen nor tongue can describe, at least in the language of truth, for there were no such things there.

Sandy Hill is an airy and very handsome village, in a situation such as its name imports; but I do not know that it has any other present claim to distinction except its pleasant appearance, and, perhaps, healthy situation. But all the ground from here along the east side of the Hudson, for some distance below Fort Edwards, which is — miles south of Sandy Hill, is connected by so many associations with some of the most interesting events in American history, that no person of reflection who is acquainted with that history can pass over, or even near it, without being feelingly reminded of the scenes of which it has been the theatre. In the war between England and France, from 1755 to 1763, a great part of the burden of which fell upon this then infant country, Fort Edward was perhaps the principal centre of action; and though the bones of the sufferers have mouldered back to their native dust, the elements have washed away the stains of blood, and the current of time has swept most of the melancholy tale into the black waters of oblivion; yet the earth at Fort Edward still exhibits the remains of some monuments, which seem to remind the reflecting traveller of those who sleep in the dust below. In the war of the revolution, also, among many less painful occurrences, the story of the murder of Miss M'Crea is here still often recited from memory by those who witnessed the shocking scene.

From Sandy Hill, after taking a trip in the stage as far south as Fort Miller, and back again the same evening, I proceeded to Glen's Falls, a distance of three miles nearly northwest.

I arose early next morning to commence my reconnoitering excursion, and in five minutes, conducted by a kind of intuitive impulse, I was on the centre of the bridge across the Hudson, immediately below the falls; and if before I was at a loss for subjects to contemplate, I was here lost and overwhelmed in feelings of interest which I could not define, and in the contemplation of wonders which I could scarcely describe, and much less explain. It was not the mighty cataract of falling water, for I have seen much greater bodies of water fall a greater distance; it was not the advantages which these falls present in propelling labor-saving machinery, though they afford a truly elegant and extensive hydraulic power, for I have seen others certainly in all respects equal, and I should think superior. There were appearances through the whole of infinitely more importance to the mind of a naturalist, or even to any man of reflection, than to gaze at a water-fall. The water of the river comes to the top of the falls upon a bed of horizontal stratified carbonate of lime, and the strata are intersected by vertical fissures running nearly in the course of the river, and these again crossed by other fissures nearly at right angles with the first, but at greater distance. When the falls commence, the blocks formed by those fissures seem to have been taken out, leaving two or three oblong projections down the stream of different lengths, and forming separate chasms, parallel to each other, into which the water falls, running in different channels, till it meets in one body below the projections. These projecting blocks or partitions which separate the water are of different widths, the widest I should say, speaking from recollection, two or three rods, and the longest thirty or forty rods, or perhaps more. The sides appear to have been originally parallel at their base, but the never-ceasing attrition of the water co-operating with the vertical and horizontal fissures, and aided also by different degrees of hardness in the stone, and perhaps in the strength of the current in different places, have worn and shaped them in such a manner as would seem impossible to have been effected by nature, unassisted by art; and when we look at the banks on each side of the chasm, entirely below the falls, which I should think are about fifty feet high, particularly the north bank—when we see it presenting an entire wall with a more regular and smooth surface than any wall of one fifth of the duration laid by art;—when we view every course laid with an exactness of horizontal line, and a regular breaking of vertical joints, all as accurate as if hewed and laid but yesterday, and here and there interspersed with recesses or niches,—it seems hardly possible to reconcile the mind to consider it a work of nature. But as art is most admirable when it imitates nature, so nature seems most wonderful when she appears to imitate art. There are holes in those blocks which divide the channels, one of which I passed entirely through in a devious winding course, a distance of several rods from one channel to the other. I should have lost the gratification of exploring this mysterious passage, had it not been for a little boy, who, discovering me to be a stranger, kindly volunteered to be my conductor, no doubt anticipating some corresponding degree of kindness in return. He showed in several places curious organic remains, and some little specimens which he had collected, and had in his pockets, still more interesting, and for which he was probably in hopes to find in me a purchaser; but as geology was not my principal object, at least that branch of it, I did not in that particular patronize him.

But the interest which this place is calculated to excite, is not solely confined to curiosity and wonder. This immense mass of stone, which appears to form the substratum of the country to an unknown distance, is found to afford a supply of excellent marble, which art and time united can never exhaust, and of different shades, varying, in what I saw, from grey to black. It is taken out in blocks of such regular shape, as to require little or no waste, and, I was told by the workmen, improves as they penetrate farther into the quarries. The falls afford the necessary hydraulic power to manufacture it, and at the same time serve as a feeder to the canal by which it is transported to market, this branch meeting the northern canal at Fort Edward. Thus the supply of marble, the inanimate mechanical power to work it, and the means of cheap and easy transportation, all lie within the compass of a few rods. There was a saw-mill in operation, with five gangs of saws, each gang containing, as nearly as I can recollect, from 5 to 15 saws at work, sawing the marble into slabs, and other forms. This, with the lumber which comes down the Hudson, and is sawed at this place, and like the marble transported through the canal, must be sources of considerable wealth to the place; and though the latter will in time become exhausted, the former will for ever increase in perhaps a greater ratio. The village is very pleasant, having all the advantages of a beautiful location, with a fine soil. I remained here through the day, which was Sunday, and in the evening returned to Sandy Hill, in season to take the stage for Whitehall.

*(To be continued.)*

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*On Quantity of Seed.* By H. C. [For the New-York Farmer.]

Rye this year promises to be a very abundant crop. In looking however at many of the fields in my vicinity, it is obvious there was a great deficiency of seed sown. The usual quantity sown by the farmers here on good land is about three pecks to an acre. I do not believe

this is half enough. Rye spreads much less than wheat; and thin sowing leaves room for an abundant and pernicious crop of weeds.

An intelligent and successful farmer of Long Meadow, in this State, gives me his opinion, that two and a half bushels of seed is not too much for an acre of wheat; and that when sown thickly, he thinks from his own experience that it is much less liable to be blasted. He holds the same opinion in regard to rye. There are two kinds, or rather varieties of rye, raised with us: the white, and the black or dark colored. The white produces bread hardly distinguishable in its appearance from wheat; and is of a very superior quality. In productiveness, there is no difference in the two kinds.

H. C.

July, 1835.

## NEW-YORK FARMER.

AUGUST 1, 1835.

THE CROPS.—Intelligence of the harvest, so far as received, is favorable. The gloomy predictions of a failure of crops will not, from present appearances, be realized.

In Pennsylvania the crop is at least an average one. The Norristown Register says—"Our farmers are now busily employed in harvesting their grain. The Wheat crop, in this neighborhood, surpasses all expectation. We do not recollect ever to have seen finer grain. Rye is also a good crop. Oats promise abundance, and Indian Corn, in this vicinity, gives every indication of a profitable crop."

The American Farmer says—"We have received a most interesting letter on the prospects of the crops in Lancaster County, Pa., from which we learn that that rich county will produce far above an average crop of Wheat the present season. Lebanon and Berks promise equally well."

In New Jersey the harvest is unusually abundant. The Woodbury (N. J.) Herald says—"The Harvest of the Farmer, which has been generally successfully husbanded, in this county, is very abundant, and in quality little if any inferior to the richest gatherings for the last quarter of a century."

The Belvidere (N. J.) Apollo says—"Our farmers are now busily employed in preparations for the approaching harvest, and we hear from all parts of our county that their labors are promised an abundant reward.

The Washington (N. J.) Whig of the 10th ult. says—"The crops in Cumberland will produce a very fair average, although the appearance a short time since, was very unfavorable.

"The present crops will be full in Salem county, and as heavy as any previous season. The wheat, rye and oats will turn out quite as good and perhaps better than for some years past."

In Maryland also the grain crop is somewhat better than we were led to anticipate. The Commercial List contains a letter dated, Head of Chester, Md., which says, "our crops of Wheat are very light in quantity, but will be, so far as I have ascertained, of excellent quality—the heads are heavy, and the grain well formed and plump."

And the Williamsport (Md.) Banner of a late date says, the harvest has commenced in the county, and the prospect of a fair average crop in the county is very good.

Of the Virginia crops, the Frederick (Va.) Examiner of July 15th says—"Our grain fields, whose harvests are now falling before the scythe or the sickle, although they may not make so abundant returns as in other years, are unusually rich, a rare evidence of the strength of the soil in developing, to an extraordinary degree, some of its products."

Extract of a letter to the Editor of the New-York Farmer, dated Ann Arbor, M. T., June 30, 1835:

SIR,—Enclosed you have three dollars, my subscription for the present year for your valuable work, the "New-York Farmer," &c. I have neglected it until the present; it deserves better attention, being satisfied it is a work of incalculable advantage to the farming community. I wish the farmers in this fine section of country could be induced to subscribe for it. That amount of money could not be laid out to more advantage. You ought to have an agency in the Territory; it is fast filling up with industrious, respectable, and wealthy families, from most of the eastern States, and Europe. We shall be able to compare with any of our sister states in the course of another year, when we expect to take our station on the star spangled banner of our glorious Union. Our delegates have just returned to their homes from the city of Detroit, having been engaged some weeks in forming a constitution for the future state of Michigan. Their production has given general satisfaction, so far as it is known; it is unquestionably a good one. The country is fast improving, and will shortly more resemble an old than a new country; we expect a railroad to be commenced this season from Detroit to this place, a distance of 40 miles. It will be a desideratum to this part of the country, as it will pass over the worst part of the road in the territory. Property is advancing very rapidly in value; and farmers who came 4 or 5 years since, poor, and only able to take one or two lots of land, are now wealthy. Mechanics and traders are doing well; in fact, all classes of citizens may find a country inviting, and presenting prospects for locating, not to be met with in many older states.

In haste, yours respectfully,

T. C.

*The New American Orchardist, or an account of the most valuable varieties of Fruit of all climates, adapted to cultivation in the United States*, with their history, modes of culture, management, uses, &c.; and the culture of Silk; with an appendix on Vegetables, Ornamental Trees, Shrubs and Flowers. By WM. KENRICK. Boston: Russell, Odiorne & Co., 1835.

In Vol. VI. page 170, of the New-York Farmer is a review of this work, and a comparison between it and Mr. Floy's edition of Lindley's Guide. This second edition of Mr. Kenrick's work is very much enlarged and improved. The mechanical part, in character with the Boston press, is very beautiful. The title of the work denotes its comprehensiveness and probable usefulness; and an examination fully sustains its claim to public patronage as a very convenient and valuable publication—one that every farmer and gardener will find a very important and almost indispensable acquisition to the library. We know of no American work on this subject that will compare with it in the variety and valu of the information, and in cheapness.

Mr. K. has taken the responsibility of a large edition, and we hope he will be remunerated. The book can be had in this city at the seed store in Barclay street, and probably at the others in this city.

On a future occasion we may probably give a further notice. S. F.

We have been furnished with the following circular, giving notice of the 'Eighth Anniversary Fair, of the American Institute of the City of New-York;' which will, we doubt not, as heretofore, be well attended, and at which our citizens will as usual derive much pleasure.

The circular, giving notice of the Fair of the *Mechanics' Institute of the City of New-York*, to be held on the 29th September next, will be found at page 256.

EIGHTH ANNUAL FAIR OF THE AMERICAN INSTITUTE OF THE CITY OF NEW-YORK.—The Managers have the satisfaction to state, that they have procured for the coming Fair, Niblo's spacious and convenient establishment, 576 Broadway.

Articles intended for competition for premiums, will be received at the Garden on Friday and Saturday, the 16th and 17th of October next.

On Monday forenoon, the 19th of October, the judges will examine the articles intended for premiums. Such as are for exhibition merely, may be brought at any time during the Fair.

On Monday, at 12 o'clock, the Garden and the Saloon will be opened to visiters, and continue open four days.

The preparations for this exhibition already brought to the knowledge of the Managers, satisfy them that the coming Anniversary will afford the most cheering proof of our rapid progress in the arts, by a more ample display of the extent and perfection of American skill and industry, than has ever before been exhibited in this city; as well in the household departments of industry, as in those of the workshops and the larger manufactories.

The objects of the American Institute, under its charter, are broad and multifarious, embracing agriculture, commerce, manufactures, and the arts, throughout the United States. Space has accordingly been provided, suitable for a great number of bulky productions, natural and artificial.

The exhausting effects of our importations of woollens, cottons, and silks, amounting to nearly thirty millions of dollars per annum, render their increased home production extremely desirable. With a view to this, the quantity of broad-cloths presented for competition for the first premium, will be required to be not less than fifty yards; and cassimeres not less than one hundred yards. And in the awarding of premiums on cotton and silk goods, some regard will also be had to the quantity.

Inventors of curious and useful machines are particularly invited to exhibit their operations. These moving evidences of mechanical genius impart life and entertainment to the scenes.

The Ladies at all our former Fairs have contributed largely to render interesting the display. The Managers rely in full confidence on their continued favors.

Patriotic individuals—friends of American industry, and distinguished characters in

this and other states, — are invited to attend the exhibition, and give their accustomed countenance and support to an institution that has for so many years exerted its influence to stimulate industry, and establish on a durable basis the independence of our country.

THADDEUS B. WAKEMAN,
MARTIN E. THOMPSON,
ADONIRAM CHANDLER,
JONATHAN AMORY,
ANDREW WILLIAMS,
JAMES F. KENNY,
JOSEPH TORREY,
JOHN SAMPSON,
FREDERICK H. WOLCOTT,
JOSEPH TITCOMB,
CHARLES H. HALL,
ISAAC FRYER,
EDWARD V. PRICE,
Managers.

P. S.—In order to give full publicity to the exhibition, Editors of papers friendly to manufactures, the arts, &c., are respectfully requested to give the foregoing one or more insertion.

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EFFECTS OF LIGHTNING.—The Boston Traveller says: Our readers will be interested in the following account of a scientific examination of the several buildings in this vicinity, injured by lightning during the storm of the 13th ult. It is from the pen of a practical electrician, well known in this community, who has been eminently successful in his researches, and who seems at length to have perfected the application of metallic rods to the prevention of dwellings from damage by lightning. It is certainly very remarkable, as mentioned below, that of four buildings struck, three should have been furnished with the round rod so common in most parts of the country.

"SIR—By request of a number of scientific gentlemen, I proceeded in company with one of them to examine the buildings struck by lightning in this vicinity, on the afternoon of Saturday, June 13. The first was the dwelling house of Professor Palfrey, at Cambridge. The Professor politely accompanied us, and gave all the information required. This building had a round lightning-rod, with points at the top, but blunt in the ground. It was affixed to the back part of the building. In this examination, I was satisfied that the discharge of lightning was horizontal, from one cloud to another, taking the earth in its course. Passing over the points of the rod, it was attracted by them, passed down the rod to the upper part of the lower story; here it left, and struck into the building, passing through various parts and rooms by the bell wires, which were melted and otherwise destroyed. It left the house by the front door. In one remarkable instance, the lightning passed by the side of a door on a bell wire, which it melted, spreading the oxide of the wire on the plastering in its passage.

"From this building we proceeded to Brighton, and examined the meeting-house of the Rev. Mr. Austin. Here I was again satisfied that the discharge of lightning was horizontal; being received on the points of the round rod, it passed down the rod to the side of the building opposite the stove funnel, when it struck into the building, taking the stove funnel in its course, and passed down on one of the supporting pillars of the gallery, and off to the ground on one of the beams that supported the floor.

"Some days after, I visited the meeting-house near the bridge in Braintree, which was struck by lightning during the same storm. This house had also a round rod, pointed at the top and blunt in the ground. Such rods afford but an imperfect protection. In this instance, the earth about the conductor was considerably disturbed. About ten feet from the ground, near the rod, there was a perforation in the side of the building, where the lightning entered and passed under the stairway that leads to the gallery, and through the partition to an iron brace that supported the stove funnel. It then appears to have passed on the funnel to another brace, that was secured to one of the pillars, on which it descended, shattering it to pieces. The pillar opposite was also a little damaged; and other trifling injuries appeared about the building.

"I have also examined a dwelling house at Brookline, that was considerably damaged by lightning at the same time. This house had no conductor. The lightning struck a large tree in front of it, which it evidently left and descended on the building.

"During this thunder storm, we have three instances out of four, where houses having round conductors were struck by lightning, and where, it is evident, the rods afforded but little or no protection. The cause to me is very plain. In the first place, the number of rods is not sufficient. Secondly, they do not present in all directions a sufficient attracting power; and thirdly, they are in most cases put upon buildings by persons who are not familiar with the science of Electricity and the operations of lightning; and who of course are liable to leave them faulty in many very essential particulars.

"During thunder storms, there are three different discharges of lightning—from the earth to the clouds—from the clouds to the earth,—and through the atmosphere from one cloud to another. These latter discharges are more frequent than any other, and often take the earth in their course, and were by the philosophers of the last century called rebounding strokes of lightning. To meet these various discharges of lightning, we must have conductors armed at all parts—that is, they should present in all directions an attracting influence, by which the electric fluid may be discharged gradually and silently, without an explosion. The explosion prevented, all harm is prevented. This attracting, or receiving power, as it is more properly termed, depends on the points; hence the greater the number of points and sharp and rough corners, the greater the protecting power. Conductors should not only be armed with these numerous points, and should be pointed on the ground, but they should be placed upon the most exposed parts of the building. This requires the judgment of a person acquainted with the operations of lightning, and the nature of different substances to conduct it. Let such rods be placed on our buildings, under the direction of an experienced electrician, and we shall no more hear of lightning leaving the rod and striking into the building.

"Certain trifling things have been considered necessary for lightning conductors; such as silvering the points—pieces of glass to prevent the lightning from entering the building—and surrounding the lower extremity of the rod with charcoal. These are of no use whatever. That round rods with their silver points, their glass fastenings, and the lower end surrounded with charcoal, do not afford sufficient protection, is evident from the fact, that a great proportion of the houses struck by lightning are houses professedly protected by such rods. That the square rod with the numerous points and sharp corners does most effectually protect a building, may be easily proved by experiments with an electrical machine, to the satisfaction of every unprejudiced person. Another consideration of some importance in favor of these rods, is the fact, that of more than two thousand houses thus protected, I have never known an instance where the building was in the least injured. These rods discharge the electric fluid without an explosion, and consequently without harm."

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**The whole amount of wool raised last year in the United States was seventy-five millions of pounds, in addition to which about three millions were imported from abroad, making the whole quantity manufactured in American factories seventy-eight millions of pounds. In addition to the above, manufactured woollen cloth was imported to the amount of six millions, making the entire consumption in this country eighty-four millions of pounds.—[Baltimore American.]**

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The Lexington Intelligencer of the 7th inst. says, "We understand that H. CLAY, Esq., sold to Spencer Cooper, Esq., a few days ago, one of the improved *short horned Cows*, with a calf one day old, by *Accommodation*, for $500, but she is said to be unsurpassed in promise. Before the cow and calf were removed from Ashland, Mr. Cooper sold the calf, delivered at weaning, to Major S. Smith, for $200."

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The Perth Courier, on the authority of a correspondent, gives the following account of a most singular phenomenon, which occurred in the township of M'Nab a few weeks ago. About eight acres of land were suddenly removed from their former position, and thrown, almost in a compact body, into a large bay of the Madawaska river, about half a mile distant, most of the trees still standing in their natural position, and now forming an island. The chasm formed by the removal of so much soil, is about one hundred and fifty feet deep, quite perpendicular, and semicircular in shape. The shock was altogether local, but so powerful as to cause the fish to be thrown out upon the banks of the river. The phenomenon was not occasioned by the action of water, the soil being perfectly dry, and no appearance of moisture of any kind. Neither was any earthquake noticed; on coming within twenty yards of the lower extremity of the chasm, however, a strong sulphuric flavor proceeds from it, which is not so palpable on getting a few yards within the breach. Considerable damage was done to timber lying in Madawaska bay.—[Montreal Gazette.]

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Bituminous coal has been found in the immediate vicinity of Erie.—[Pennsylvanian.]

[From the Edinburgh Quart'y Journal of Agriculture.]

ON AN IMPROVED METHOD OF MOUNTING THE CRADLE-SCYTHE.—So far as I recollect, the Rev. Mr. Farquharson, of Alford, stated, in his former communication to the Highland Society on scythe-reaping, that latterly no appendage whatever was used on the scythe, in his neighborhood, for assisting in carrying round the cut corn to the swathe; and that scythe-reaping had been brought to its present pitch of perfection by laying all that sort of thing aside, and using nothing but the common hay scythe. In his last paper, however, he seems to admit the necessity of using a bow, except when the crop is much lodged; but even in that case I am clearly of opinion that some appendage on the scythe is indispensably necessary, and certainly would prefer a small rake to any thing I have yet seen. I have now had another year's experience of the cradle-scythe,* and have no hesitation in saying that it is the most efficient implement of the kind that I know of. Its superiority to the "long curved handle" consists, as I formerly stated, in the comparative ease with which it is wrought, which every person who has used it, and with whom I have talked on the subject, readily admits. I do not say that an experienced mower will not make sufficiently good work with a scythe fixed to the long curved handle, provided a rake be attached to it; but let any one compare such and the cradle-scythe at work together, and he will be at no loss to discover the preferable implement. Before the introduction of the cradle-scythe, the scytheman used to complain a good deal, for some days at the commencement of harvest, of *sore sides*; but no such complaints are now heard of. This is easily accounted for: Before the cut corn can be laid nearly square to the uncut with the long curved or common handle, the mower's left hand requires to go at every sweep considerably farther round to the left than with the cradle-scythe, owing to the position of the handles on the sned; and this, of course, occasions a corresponding turn of his body in that direction, which must be very sensibly felt.

The rake can be made very light; in fact, very little, if any thing, heavier than a bow, and the expense of either is trifling. I find that one bar about ⅜ths of an inch thick quite sufficient to hold the teeth; and for all the cost I would recommend having rakes of various lengths, of from ten to thirteen or fourteen inches. For one of the shortest size, three teeth are commonly used, but I think they are no worse of four; and experience has taught me that much shorter teeth than those generally in use answer equally as well, and are much more easily disentangled of the cut corn. The teeth should be curved a little, like the blade of the scythe. Last harvest, a friend of mine suggested it as an improvement to have rakes of a circular form, and made so as to move out and in on a hinge at the lower end, in order to suit the different inclinations of the crop. Coinciding in his opinion, I got some of them made for a trial, and have the satisfaction to say, answered remarkably well. The head of the rake is eleven inches in length, and is curved to form a segment of a circle of about one foot four inches radius. The uppermost teeth are from five and a half to six inches long, and each of the three lowermost extends an inch beyond the one immediately above it. Instead of the rake being fastened to the heel of the scythe, as mentioned in my last letter, a piece of iron with two upright plates is clinked to the back of the scythe, about an inch from the back end of the blade. The rake is inserted between these upright plates, as in a socket, and a round nail with screw and nut is passed through them to keep the rake in its socket. By this contrivance, the rake can move backwards or forwards on the round nail as occasion requires. It is held steady, in whatever position it is placed, as follows: The small iron rod that connects it with the left handle of the frame is made thin at the end, and has seven or eight holes in it about ⅜ths of an inch asunder. This part of it is bent so as to correspond with the limb or plane of the handle, to which it is held fast with a nail and thumb-screw, and by which it is readily shifted. The nail is put through the handle, from the lower side, six inches above where the handles unite. When the corn stands upright, there is no difference in the position of the rake to the blade and handle of the scythe from the straight rake, except that the former is placed on the back edge of the blade, and the latter fixed into an eye-headed wedge at the heel of it. Both stand perpendicular to the blade, and it is only when the corn lies away from the scythe that the position of the circular rake differs from that of the other. If the corn be lodged or partly laid over with wind at the time of mowing, the circular rake is set back at the top by shifting the holes in the end of the rod that holds it fast to the handle, so as to answer the lay of the corn; and it is in this respect that it has the advantage of the straight-headed rake.

Last year, part of my crop, both oats and barley, was a good deal lodged; indeed, some of the former, on soft mossy land, were laid flat and twisted in every direction. The operation of cutting was consequently more tedious; but all was performed with the scythe in good style, and at much less expense than it could otherwise have been done. In instances of this kind, I would humbly recommend to cut *in* instead of *out* of corn, as it is usually termed. I adopted this plan last season, and really think it a good one. At first the scythemen were averse to it, but in less than half a day they changed their opinion, and acknowledged it to be the best. I commenced with it in a field of pretty ripe potato oats, which were a good deal lodged, and the grain dropping off in the working; and it was soon discovered that there was less loss of grain, a much freer cut, fewer rakings, and a neater stubble, — circumstances of no small moment to the farmer. The corn can be laid round, as even, and nearly as square, the one way as the other; but cutting *in*, if the crop is thick, seems rather hardest for the uptaker, which is owing, in some measure, to the free working of the scythe on the right hand, which allows the operator to come more speed.

Now that that very important operation, scythe-reaping, has become common in many parts of the country, and is practised in various ways in different places, it occurs to me that it would be an object well worth the serious consideration of our agricultural societies to promote its improvement, by holding competitions, and awarding prizes to the most meritorious competitors, as in the case of ploughing matches.*

I. F.

* Cradle, a frame for a scythe.—[Bailey's Diction'y.]

* We cordially recommend this suggestion of our intelligent correspondent to all agricultural societies.

[From the London Penny Magazine.]

GLOUCESTER CHEESE.—In the preparation of this cheese, the milk is, in the first instance, put into a cheese-cowl (which is a large deep tub) with two teacupsful of rennet. A ball of annatto is then dipped in the milk and rubbed on a piece of pantile, which is washed into the milk till the color is as high as required. The quantity of annatto is regulated by the wishes of the cheesefactor, some liking more than others. Originally only a small quantity was employed, to induce the belief that the cheese was rich, and to prevent its being discovered that skimmed milk had been used. But now almost all the cheese is highly colored; and the color is no criterion of the goodness of the article. After an hour has elapsed, the milk is converted into curd; this is cut with a cheese-knife, which is about fourteen inches in length, and has two edges; it is cut gently at first, and then very small. It is suffered to remain ten minutes, when the milkmaid puts her arms into the cowl and draws the curd gently towards her, turning it over in the whey. She afterwards draws it again towards her to dip out the whey, which is strained through a sieve, and the small pieces of curd that are strained from it are returned to the cowl. The curd is then put into vats, in which cloths had been previously laid. The vats are placed one on another, and put in a cheese-press for ten minutes, a vessel having previously been placed underneath the press to catch the expressed whey. After this, the curd is taken out of the vats and broken small, and some hot whey is poured over it. The curd is then drawn to the side of the cowl to drain from the whey, which is ladled off and strained so that no curd may be wasted. Then the curd is again put into the vats, and they are pressed one on another; any curd that is pressed over the edges of the vats being put in the middle of the vats to make the mass as firm as possible. In an hour the vats are taken out of the press to have dry cloths, after which they remain in the press till night, when the compressed curd is taken out of the vats, turned and salted, and then replaced in the press, and there remains till morning, when it is salted, and also again the following evening. The second morning the cloths are taken off, but the cheeses are left in the vats seven or eight days, being turned night and

morning. After that, they are put on the floor of the cheese-loft, (which is a large room on purpose for keeping cheese,) and turned every day for three weeks or a month. In two months the cheeses are scraped and painted. The paint is a red powder, which is strewed over the cheeses and rubbed on them with the hand. In three months, they are what is technically called "ready," and are fit for the cheese-factor.

The whey that drained from the curd, during the process of cheesemaking, is put into trendles (a sort of tub) and suffered to remain till the next day, when it is skimmed. From this whey butter is made, and the residue is given to pigs. The rennet is made by mixing salt and water till it will support an egg, and then boiling it half an hour. When it is cold, four calves' stomachs are put to a gallon of the brine, with bay leaves and slices of lemon. In six weeks it is fit for use.

For single Gloucester cheese, the vats, which are made of elm, are thirteen inches in diameter, and about two inches and a half in depth: for double Gloucester cheese, the same diameter, and twice, or more than twice the depth. All the dairy utensils, after being used, are washed with tepid water, and then scalded. In making the double Gloucester cheese, and those that are called "truckles," the same method is pursued, except that more care is used in pressing the curd into the vats, which, for such cheeses, have three perforations to let the whey drain off; and bandages of cheese-cloth are put round when the curd is above the vat. Sage-cheese is made by pounding sage and straining the juice into a pail of milk, to which rennet is then added. The same process is observed as for other cheese till the time when the warm whey should be poured upon it, when it is broken up with as much of the simple curd as the milk-maid considers necessary, and treated as other cheese. To make the richest cream-cheeses, the thickest cream must be taken, and put, with a little salt, into a straining-cloth, which is hung up twelve hours, in order that the whey may drop from it. When it is taken from the cloth, it is put between two pewter-plates, with a weight on the upper one, and turned daily during five or six days. These cheeses can only be made in this manner in warm weather. The milk that the cows give when they are first turned into the fields in the spring, and when they are afterwards pastured in fields that have been newly mown, yields nearly as much curd again as at any other period; and it is also much richer. The principal season for making the thin cheese is from April to November; and that for making the thick, May, June, and the beginning of July.

In different districts, the produce of cows differs very much; but, in the Vale of Gloucester, from 3½ to 4½ cwt. per cow is considered a fair annual average return. The same cow, on different pastures, will yield milk of very different qualities; from one will be made rank and unpleasant cheese, while the other will be fine and rich. An estimate of the profit and expenses of a farm for twenty cows can be, from the continual variation in the state of the times and local circumstances, of course only an approximation towards the truth. But the following, made in the Vale of Gloucester in 1835, where the land is rich and excellent, is as accurate an annual average statement as the nature of the subject will admit:

| | | | |
|---|---|---|---|
| Rent of 40 acres, at 50*s.*, for pasture | £100 | 0 | 0 |
| ——— 20 acres for hay | 50 | 0 | 0 |
| ——— 2 acres of arable, for potatoes | 5 | 0 | 0 |
| Making hay, 12*s.* an acre | 12 | 0 | 0 |
| Carrying and ricking | 2 | 10 | 0 |
| Expenses of raising potatoes and seed | 15 | 9 | 0 |
| Tithes, 3*s.* 6*d.* in the pound | 27 | 2 | 6 |
| Poor and other rates, 3*s.* 9*d.* in the pound | 29 | 2 | 11 |
| Dairymaid, 7*l.* a year (besides board) | 7 | 0 | 0 |
| Dairyman, at 7*l.* a year (besides board) | 7 | 0 | 0 |
| Wear and tear of dairy utensils | | 10 | 0 |
| Salt | | 10 | 0 |
| Annatto, 4*s.* a-pound | 1 | 0 | 0 |
| Rennet and paint | 1 | 4 | 0 |
| Interest of money laid out in stock and implements, reckoning each cow at from 8*l.* to 10*l.*, and chance of loss | 20 | 0 | 0 |
| Profit | 87 | 11 | 7 |
| | £366 | 0 | 0 |
| Cheese, 4 tons, at 4 cwt. each cow, and at 44*s.* per cwt. | £176 | 0 | 0 |
| Value of whey | 20 | 0 | 0 |
| Pasture of colts and sheep | 20 | 0 | 0 |
| Profit of calves | 30 | 0 | 0 |
| Butter | 90 | 0 | 0 |
| Pigs | 5 | 0 | 0 |
| Potatoes | 25 | 0 | 0 |
| | £366 | 0 | 0 |

The capital necessary for the purchase of stock for such a farm would, according to present prices, be about 300*l.*; but as it is not prudent that the whole of the capital should be expended, a man who had only that sum should take a smaller farm, and reserve a part for the payment of work-people, and other incidental expenses which would be required before much profit was derived from the farm. From the depressed state of agriculture, the present time is not by any means auspicious for the commencement of business as a dairy-farmer. The requisite dairy utensils will cost about 25*l.*

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[From the same.]

OLD METHOD OF TAKING HONEY FROM THE HIVE.—A correspondent, who apprehends that many of our readers are unacquainted with the manner in which bees are usually deprived of their honey, sends us a description of the process, which he hopes will soon be superseded by the more humane and efficient method of Mr. Nutt, which we have described in No. 113, page 11, of the third volume.

When the time for taking the honey arrives, which is at the end of August or the beginning of September, on some evening after the bees have retired into the hive, a small hole is dug in the ground near to the stand or bench on which the hive rests. This hole is filled with pieces of cotton or linen previously dipped in melted butter; and when all is ready, these are set on fire, and the hive is gently lifted off the stand and placed upon the hole. The escape of the bees is prevented by the earth which is dug out of the hole being heaped around the bottom of the hive; and thus the poor insects perish amidst the sweets for which they have toiled all the summer, and by the hands of those who have afforded them a house in which to lay up their stores. The cruelty and treachery of this measure could only be excused by that necessity for it which has now been superseded. That our readers may have an idea of the number of these industrious little beings deprived of life for the sake of a few pounds of honey, it may be stated that a single hive is supposed generally to contain 16,000 bees; but let us say 10,000, — then, as each hive affords about sixteen pounds of honey, 400,000 bees must be killed in order to obtain, from forty hives, 640 lbs. of honey. When the honey has been expressed from the honey-comb, the comb is boiled in water, which is afterwards strained through a fine sieve, and that which remains in the sieve is the substance called "bees' wax," so much used for polishing furniture, &c.

If the season proves unfavorable for the gathering of honey, the bees are not destroyed, as that would be an unprofitable sacrifice of insect life, but they are reserved for another season, and fed during the winter with brown coarse sugar, moistened with ale. A wet summer is very unfavorable to the collection of honey; and in a fine summer it often happens that the bees are deprived of their honey by wasps and wild bees. Our correspondent has known instances in which a hive of bees, in a very prosperous condition, have been deprived of all their honey, and a great number of the bees destroyed, by wasps. A wasp will conquer five or six bees at once by means of its sharp incisors, with which it cuts large pieces out of their wings, and thus prevents them from flying; and being unable to reach the hive, which is raised some distance above the ground, and from which the wasps always thrust them, they perish during the night.

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[From the Quarterly Journal of Agriculture.]

*Report of the Committee for the Premium offered in* 1833 *for Curing of Beef and Pork, in the Counties of Lanark, Renfrew, and Dumbarton.*

Your Committee have it now in their power to report, that three competitors came forward for the premium of twenty guineas, offered by the Society in 1833, to the counties of Lanark, Renfrew, and Dumbarton, for the curing of *mess beef*, under certain conditions.

The competitors were Thomas Neilson, John Lockhart, and John Bell, all of whom have conformed to the rules prescribed. The quantities cured by each stand thus:

| | |
|---|---|
| Thomas Neilson, - - | 45,954 lbs. |
| John Lockhart, - - | 31,800 " |
| John Bell, - - - | 24,600 " |
| Together, - - - | 102,354 " |

The quality of the beef, and the mode of curing and packing, have had the attention of your Committee; and their award has been made, not only from personal inspection, but from certificates under the hand of ship-masters, who have used the article as ships' provisions; and of planters in the West Indies, to whom it was shipped as stores. It is

satisfactory to state, that, in general, these certificates have been highly satisfactory, — particularly as regards the finer qualities of beef, sent to the West Indies for planters' use. Against the beef supplied by Messrs Neilson and Lockhart, no complaint has been made; and it is but justice to them to state, that they have both been at great trouble to ascertain the proper methods of curing, &c. The former of these gentlemen has succeeded the best; and to him your Committee have unanimously awarded the premium.

Your Committee are of opinion, that, at present, no district in Scotland can derive that extensive advantage from the curing of beef which some parts of Ireland enjoy; because the Irish curer can undersell the Scotch in almost every description of salt provision. Your Committee, however, think that the premium has by no means been thrown away; as the result has shown that beef can be cured in Scotland as well as any where else. In so far as the finer qualities, viz., planters' beef, are concerned, they decidedly think this branch of the trade will increase, and form a source of profit to the wholesale butcher or curer, which, of itself, will leave no cause for the Society to regret having offered such liberal encouragement to the grazing interests of the counties to whom this competition was opened.

No competitor came forward for the curing of *pork*, as it is difficult to obtain pigs which have been fed in this district in sufficient quantity. The supply, particularly from the West Highlands, is, however, rapidly increasing; and your Committee do not doubt that, in a short time, it will be more than sufficient for the home consumption.

Glasgow, December 10, 1834.

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[From the Edinburgh Quart'y Journal of Agriculture.]

*Experiment made on the comparative advantages of Feeding Cattle on Raw or Steamed Food.* Supplementary to a Report previously published. By Mr. ROBT. WALKER, Ferrygate, Haddington.

On the 20th of February, 1833, I selected from my feeding stock four stots and six queys, as related at p. 253 of the tenth volume of the Transactions. Two of the stots were kept on steamed, and the other two on raw food. One of those fed on raw and one of those fed on steamed food were sent off to be slaughtered on the 10th June, 1833. The other two, No. 8 and No. 10, were kept on, in order to ascertain the improvement the third year, until 11th January, 1834, when they also were sent away and slaughtered. Their live weights were regularly ascertained at the 20th February, 1833, when put up to be fed, and at the 20th day of every succeeding month, during the time they were kept on. From 20th February, 1833, until 25th May, when put to grass, the two stots on raw food consumed 140 lb. of Swedish turnips, 30 lb. of potatoes, and 4½ lb. of bruised beans, per day each beast. But the two on steamed food consumed considerably more turnips; for a statement of which see my Report on that subject to the Highland Society (vol. x. p. 253). From the 25th May until the 12th August, the two stots, which were kept on, went in a very fine field of grass; they were again brought into the court-yard on the 12th of August, and fed upon second crop clover cut grass, what they could eat, with the old allowance 4½ lb. of bruised beans per day each, the same quantity of beans being continued to the end of the experiment. On the 4th of October they began to get, in addition to the cut grass, common white globe turnip. On the 1st December they were put on Swedish turnips, and continued on that food until sent away on the 11th January 1834. On getting the turnips on 4th October, they consumed very little cut grass, by this time the grass having lost its succulency; and it was altogether discontinued on the 14th of October, when they got oat-straw. They at no period were allowed any hay.

*TABLE exhibiting the Weight of the Animals during the Experiment. The Stot formerly fed on Steamed Food marked No. 8, the one fed on Raw Food No. 10.*

| | | REMARKS. | IN STONES. Live Weight. | Improvement. | Loss pr. m'th. |
|---|---|---|---|---|---|
| 1833. | | | | | |
| Feb. 20. | No. 8, | At beginning of experiments | 92 | | |
| — — | No. 10, | At ditto | 84½ | | |
| Mar. 20. | No. 8, | On steamed food | 98 | 6 | |
| — — | No. 10, | On raw food | 92½ | 8 | |
| Apr. 20. | No. 8, | On steamed food | 103 | 5 | |
| — — | No. 10, | On raw food | 100 | 7½ | |
| May 20. | No. 8, | On steamed food | 106 | 3 | |
| — — | No. 10, | On raw food | 108 | 8 | |
| | | Total increase on two year olds, at three months | – | 37½ | |
| June 20. | No. 8, | Out at grass on 25th May | 105 | – | 1 |
| — — | No. 10, | Do. ..... do. | 109 | 1 | |
| July 20. | No. 8, | Do. ..... do. | 103 | – | 2 |
| — — | No. 10, | Do. ..... do. | 106 | – | 3 |
| Aug. 20. | No. 8, | After being 8 days in court-yard on cut grass | 108 | 5 | |
| — — | No. 10, | Do. | 108 | 2 | |
| | | Deduct loss of weight | – | 8<br>6 | 6 |
| | | Total increase for 3 months at grass, &c. | – | 2 | |
| Sept. 20. | No. 8, | On cut grass, &c., in court-yard | 113 | 5 | |
| — — | No. 10, | Do. | 111 | 3 | |
| Oct. 20. | No. 8, | On turnips, &c., since 4th current | 118 | 5 | |
| — — | No. 10, | Do. ..... do. | 120 | 9 | |
| Nov. 20. | No. 8, | Do. ..... do. | 120 | 2 | |
| — — | No. 10, | Do. ..... do. | 124 | 4 | |
| | | Total increase for 3 months on cut grass, turnips, &c. | – | 28 | |
| Dec. 20. | No. 8, | On Swedish turnips, since 1st current | 124 | 4 | |
| 1834. | No. 10, | Do. ..... do. | 126 | 2 | |
| Jan. 11. | No. 8, | Do. ..... do. | 123 | – | 1 |
| — — | No. 10, | Do. ..... do. | 130 | 4 | |
| | | Deduct loss of weight | – | 10<br>1 | 1 |
| | | Total increase for 1 month and 22 days. | – | 9 | |
| Total increase for three year olds, from 20th May, 1833, until 11th January, 1834, being 7 months 22 days | | | | 39 | |
| Total increase for two year olds, from 20th February, 1833, until 20th May, being three months | | | | 37½ | |
| | | Difference | | 1½ | |

From the experiments we made upon two year old heifers, both last season and this, we found that they increased, upon an average, from five to six stones live weight per month each. On referring to the foregoing table, it will be seen that the two year olds in this case increased 6¼th stones live weight per month each, from the 20th February till the 20th May, 1833. But by the same table it will be seen that the average increase for the 7 months 22 days succeeding, was only about 2½ stones live weight each beast per month.

It would, therefore, appear that the two year old stots increased in live weight, during the first three months, 37½ stones. Now, we have found by experiment, that the beef of a good fat beast is about 6-10ths of the live weight, which would give about 22½ stones of beef, at 6*s.* 6*d.* per stone, equal to £7 6*s.* 3*d.*, or £3 13*s.* 1½*d.* each beast for three months, equal to £1 4*s.* 4½*d.* per month. And, on the other hand, they increased only 39 stones of live weight during the succeeding 7 months 22 days, when rising three year olds, which would give about 23⅜ stones of beef, at 6*s.* 6*d.* per stone, equal to £7 13*s.* 10*d.*, or £3 11*s.* 11*d.* each beast, for 7 months 22 days, being only about 9*s.* 3¼*d.* per month each, for the third year's keep. Perhaps the difference of monthly payments between the two and three year olds will be thought by some not to be fairly stated, inasmuch as the two year olds were worth as much per stone at the 20th May, 1833, as the same cattle, when three year olds, were at the 11th January, 1834. But this was not the case with the two year olds at the beginning of 1833, because we consider that they increased in value the whole carcass of beef, and that 6*d.* or 9*d.* per stone might have been added to the weight of beef at the 20th May, 1833.

It is not to be rashly inferred, that because the cattle had increased in weight, that their capabilities of consuming food must have increased in proportion. On the contrary, we are rather inclined to think, that a two year old will consume *more* food than a three year old, provided the beast had arrived at maturity at two years old; because, in this case, we found the two year old beasts consume 140 lb. of turnips, 30 lb. of potatoes, and 4½ lb. of beans each; and the three year old ones only 112 lb. of turnips and 4½ lb. of beans each per day. In both cases the turnips were Swedish. We make this statement with considerable diffidence, as the trial with the three year olds was only for five days, by far too short a period for any one to found upon as conclusive.

Weight of No. 8, when killed, 73 stones 8 lb. of beef; 10 stones 5 lb. of tallow; and 7 stones 3 lb. of hide. Weight of No. 10, when killed, 77 stones of beef; 12 stones 9 lb. of tallow; and 6 stones of hide.

Ferrygate, 22d March, 1832.

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TO PREVENT HOGS FROM ROOTING PASTURE LOTS.—Being determined, from motives of economy, and from duty to neighbors, to keep my hogs out of the street, I had, of course, only the alternative of confining them altogether in pens or pasturing them. I tried both plans: when in pens they did not do as well as when driven to the clover field during the day, although their food was as 12 to 7. There was a difficulty, however, in adopting the pasturing plan. After having been in the field for six or eight hours, they would, although shade and water were both in the field,

either commence rooting or endeavor to force their way through the fence. To do away both of these difficulties, I had resort to the expedient of driving them to the field with empty stomachs. Feeding them in the morning, and keeping them in their pens until towards noon, relieved me from all trouble. They would continue to graze steadily until dark, when they were brought home and fed. Thus managed, all their manure is either dropped in their pens or in the field, and no damage from breaking fence or rooting is sustained.

An extensive farmer in my neighborhood lets his hogs run in the roads all the year, except for a short time before killing them. He says they injure clover fields by biting the grass too close. Is this the case?

July 10th, 1835. S. F.

A Contrast.—An old Farmer, in a communication in the London Morning Chronicle, alludes to the talk about distress, and the hardness of the times,—and compares the conduct of the agriculturists in his early days with the *gentlemen* farmers of the present day. He says:

| In 1772, it was | But in 1835, it is, |
|---|---|
| The husband to the plough; | The husband tally ho; |
| The wife to the cow; | The daughter piano; |
| The daughter to the sow, | The wife silk and satin; |
| The son to the mow; | The boy Greek and Latin; |
| And your rents will be netted. | And you'll all be gazetted. |

The annual revenues of Prince Esterhazy, in Hungary, are estimated at 2,000,000 silver florins. His debts, or rather those of his father, amount to 18,000,000 florins. His property is at present under sequestration. He possesses about 3,000,000 sheep, whose wool annually produces an immense sum. It is related, that when Prince Esterhazy was Ambassador from Austria to England, he one day heard a young nobleman boasting that he had on his estates 30,000 sheep: "And I," said Prince Esterhazy, "have 30,000 shepherds." This was no exaggeration.

Flower Markets.—These in Paris are held four times each week, during the summer, and form an object of great interest to both strangers and residents. At a reasonably early hour, on market day, may be seen here collected the most choice flowers and most beautiful women, the good taste of the one refined by the delicacy of the other. If such a market were to be instituted here and held beneath the shade of the graceful elms in our Mall, from six to ten o'clock every Saturday morning, our Florists would soon make it attractive to the beaux and belles, and would find a ready sale for their charming productions.—[London paper.]

The Silk Cocoonery of Mr. Samuel Whitmarsh of this town is now in full operation. It is two hundred feet in length and two stories in height.—It is filled with ranges of sliding draws of twine lattice work, upon which the worms feed, and these are intersected by alleys, so that the building has fresh air and light. It is capable of feeding four or five millions of worms. At the present time he has but about eight hundred thousand. He has them in all the various stages, just out of the egg, to the winding the cocoons.

It is curious enough to see the almost invisible little worms just from an egg, less than half the size of a pin head. To notice their expansion each successive day, more than doubling themselves in size, and increasing in a few weeks from the mere mite to the dimensions of a three inch corpulent caterpillar. Then to notice their habits and instinct and way of taking their food, eating in a continued half circle upon the leaf until it is all devoured. Again, the preparation for winding itself up in the cocoon, attaching its two extremities to some object and then throwing out its threads in every direction until it excludes itself from sight.—It thus erects its own tomb and encloses itself within its bosom.

Mr. Whitmarsh does not feed his worms at present upon the Chinese mulberry. The plant is yet rare and the growers are anxious to multiply them, by laying down all the shoots. From the great number under cultivation by various gentlemen in this town, and the care taken to increase them, there is reason to believe the supply will be adequate to all demands next spring. Mr. Whitmarsh has some trees three or four feet in height, which withstood the severity of last winter unharmed. On some of these trees, the berry is now found, and great care will be taken to preserve the seed, so that the precise character of the plant propagated from them may be accurately known.—[Northampton Courier.]

Mr. John Lombe, and the Silk-throwing Machinery at Derby.—The Lombes were originally manufacturers at Norwich, but removed to London, and became silk throwsters and merchants there. There were three brothers, Thomas, Henry, and John; the first was one of the sheriffs of London at the accession of George II. in 1727, on which occasion, according to custom, the chief magistrate was created a baronet, and Mr. Lombe was knighted. The second brother, who was of a melancholy temperament, put an end to his existence before those plans were developed which connected the name of Lombe with one of the most important manufactures of the country.

The Messrs. Lombes had a house at Leghorn under the firm of Glover & Unwin, who were their agents for purchasing the raw silk which the Italian peasantry sold at their markets and fairs to the merchants and factors. There were many other English houses at Leghorn, Turin, Ancona, and other parts of Italy, chiefly for exporting silk to England, in part return for which numerous cargoes of salt fish were and still are received from our ports for the consumption of the Italians during their Lent and other fasts. It was at that time customary for the English merchants engaged in the Italian trade to send their apprentices and sons to the Italian ports to complete their mercantile education, by acquainting themselves on the spot with the details of their peculiar line of business. It was professedly in compliance with this custom, but with a deeper ulterior view, that the youngest of the brothers, Mr. John Lombe, who at that time was little more than twenty years of age, proceeded to Leghorn in the year 1715.

The Italians had at that time become so much superior to the English in the art of throwing silk, in consequence of a new invention, that it was impossible for the latter to bring the article into the market on equal terms. This state of the trade induced the Lombes to consider by what means they might secure the same advantage which their improved machinery gave to the Italians; and the real view of the younger brother, in proceeding to Italy, was to endeavor to obtain such an acquaintance with the machinery as might enable him to introduce it into this country. The difficulties in the way of this undertaking were very great, and would have appeared insurmountable to any but a person of extraordinary courage and perseverance. We find these difficulties thus stated in the paper which Sir Thomas Lombe printed for distribution among the members when he applied to Parliament for the renewal of his patent. One at least of these printed papers has been preserved, and has been lent us for the present occasion. It is there said, that "the Italians having, by the most judicious and proper rules and regulations, advanced and supported the credit of the manufacture, have also, by the most severe laws, preserved the mystery among themselves for a great number of years, to their inestimable advantage. As, for instance, the punishment prescribed by one of their laws for those who discover, or attempt to discover, any thing relating to this art, is death, with the forfeiture of all their goods, and to be afterwards painted on the outside of the prison walls, hanging to the gallows by one foot, with an inscription denoting the name and crime of the person; there to be continued for a perpetual mark of infamy."

The young Lombe, however, was not to be deterred by the danger and difficulty of the enterprise. On his arrival, and before he became known in the country, he went, accompanied by a friend, to see the Italian silk works. This was permitted under very rigid limitations. No person was admitted except when the machinery was in action, and even then he was hurried through the rooms with the most jealous precaution. The celerity of the machinery rendered it impossible for Mr. Lombe to comprehend all the dependencies and first springs of so extensive and complicated a work. He went with different persons in various habits, as a gentleman, a priest, or a lady, and he was very generous with his money; but he could never find an opportunity of seeing the machinery put in motion, or of giving to it that careful attention which his object required. Despairing of obtaining adequate information from such cursory inspection as he was thus enabled to give, he bethought himself of associating with the clergy, and being a man of letters, he succeeded in ingratiating himself with the priest who confessed the family to which the works belonged. He seems to have opened his plans, partly at least, to this person, and it is certain that he found means to obtain his co-operation. According to the scheme which they planned between them, Mr. Lombe disguised himself as a poor youth in want of employment. The priest then introduced him to the directors of the works, and gave him a good character for honesty and diligence, and described him as inured to greater hardships than might be expected from his appearance. He was accordingly engaged as a fillatoe-boy, to superintend a spinning engine so called. His mean appearance procured him accommodation in the place which his design made the most acceptable to him,—the mill. While others slept, he was awake, and diligently employed in his arduous and dangerous undertaking. He had possessed himself of a dark lantern, tinder box, wax candles, and a case of mathematical instruments: in the day time these were secreted in the hole under the

stairs where he used to sleep; and no person ever indicated the least curiosity to ascertain the extent of the possessions of so mean a lad. He thus went on making drawings of every part of this grand and useful machinery; the priest often inquired after his poor boy at the works, and through his agency Lombe conveyed his drawings to Glover and Unwins; with them models were made from the drawings, and dispatched to England piecemeal in bales of silk. These originals are still, we believe, preserved in the Derby mills.

After Lombe had completed his design, he still remained at the mill, waiting until an English ship should be on the point of sailing for England. When this happened, he left the works and hastened on board. But meanwhile his absence had occasioned suspicion, and an Italian brig was dispatched in pursuit; but the English vessel happily proved the better sailer of the two, and escaped. It is said that the priest was put to the torture; but the correspondent of the "Gentleman's Magazine," to which we are indebted for most of the facts we have stated, says that after Mr. Lombe's return to England, an Italian priest was much in his company; and he is of opinion that this was either the priest in question, or at least another confederate in the same affair. Mr. Lombe also brought over with him two natives accustomed to the manufacture, for the sake of introducing which he had incurred so much hazard.

After his return Mr. John Lombe appears to have actively exerted himself in forwarding the works undertaken by him and his brother, Sir Thomas, at Derby; but he did not live to witness their completion. He died on the premises, on the 16th of November, 1722, in the 29th year of his age. The common account of his death is, that the Italians, exasperated at the injury done to their trade, sent over to England an artful woman, who associated with the parties in the character of a friend; and having gained over one of the natives who originally accompanied Mr. Lombe, administered a poison to him of which he ultimately died.

We recur to Sir Thomas Lombe's statement, already quoted for the most authentic particulars respecting the progress of the work. The document itself is entitled, "A Brief State of the Case relating to the machine erected at Derby, for making Italian Organzine Silk, which was discovered and brought into England with the utmost difficulty and hazard, and at the sole expense of Sir Thos. Lombe." It commences with stating the capabilities of the machine. "This machine performs the work of making Italian organzine silk, which is a manufacture made out of fine raw silk, by reducing it to a hard twisted, fine, and even thread. This silk makes the warp, and is absolutely necessary to mix with and cover the Turkey and other coarser silks thrown here, which are used for shute; so that without a constant supply of this fine Italian organzine silk, very little of the said Turkey and other silks could be used, nor could the silk-weaving trade be carried on in England. This Italian organzine (or thrown) silk has in all times past been bought with our money, ready made (or worked) in Italy, for want of the art of making it here; whereas now, by working it ourselves out of fine Italian raw silk, the nation saves nearly one third part; and by what we make out of fine China raw silk, above one half of the price we pay for it ready worked in Italy." The paper goes on to state, that "the machine at Derby has 97,746 wheels, movements, and individual parts, (which work day and night,) all which receive their motion from one large water wheel, and are governed by one regulator; and it employs 300 persons to attend and supply it with work." After stating the difficulties which had been surmounted in introducing this improvement, the paper thus concludes: "Upon the introduction of which [this improvement], his late most gracious Majesty granted a patent to the said Sir Thomas Lombe, for the sole making and use of the said engines in England, for the term of fourteen years. Upon which he set about the work and raised a large pile of building upon the river Derwent at Derby, and therein erected the said machine; but before the whole could be completed several years of the said term were expired. Then the King of Sardinia, in whose country we buy the greater part of our supply of organzine silk, being informed of his success, prohibited the exportation of Piedmontese raw silk; so that before the said Sir Thos. Lombe could provide a full supply of other raw silk proper for his purpose, alter his engine, train up a sufficient number of workfolk, and bring the manufacture to perfection, almost the whole of the said fourteen years were run out. Therefore, as he has not hitherto received the intended benefit of the aforesaid patent, and in consideration of the extraordinary nature of his undertaking, the very great expense, hazard, and difficulty, he has undergone, as well as the advantage he has hereby procured to the nation at his own expense, the said Sir Thomas Lombe humbly hopes the parliament will grant him a further term for the sole making and using his engines, or such other recompense as in their great wisdom shall seem meet."

The Parliament considering the matter of much public importance, thought it best to give him a grant of £14,000, on condition that the invention should be thrown open to the trade, and that a model of the machine should be deposited in the Tower of London for public inspection. It is commonly stated that Parliament refused to extend the patent, and granted the money to soften their refusal; but we have seen that Sir Thomas himself suggested some "other recompense" than an extended patent as an alternative. In the course of time similar mills began to be erected in different parts of the country; but in consequence of the difficulties that were experienced in procuring Italian raw silk of the proper size for organzine, (the exportation of which was prohibited by the Italians,) and also because the mills happened subsequently to find employment for other purposes, the quantity worked into organzine, in this country, bore for many years no proportion to the imports from Italy. The manufacture has, however, been since revived and improved. In consequence of which it is now carried on to a very considerable extent, not only in Derby, but in other parts of the country.

The mill erected by Sir Thos. Lombe stands upon an island, or rather swamp, in the Derwent, about 500 feet long and 52 wide. The building stands upon huge piles of oak, double planked, and covered with stone-work, on which are turned thirteen stone arches, that sustain the walls. Its length is 110 feet, its breadth 39, and its height 55 feet. It contains five stories. In the three upper are the Italian winding engines, which are placed in a regular manner across the apartments, and furnished with many thousand swifts and spindles, and engines for working them. In the two lower floors are the spinning and twist mills, which are all of a circular form, and are turned by upright shafts passing through their centres and communicating with shafts from the water wheel. The spinning mills are eight in number, and give motion to upwards of 25,000 reel-bobbins, and nearly 3000 star-wheels belonging to the reels. Each of the four twist mills contains four rounds of spindles, about 389 of which are connected with each mill, as well as numerous reels, bobbins, star-wheels, &c. The whole of this elaborate machine, though distributed through so many apartments, is put in motion by a single water wheel, twenty-three feet in diameter, situated on the west side of the building. All the operations, from winding the raw silk to organizing or preparing it for the weavers, are performed here. The raw silk is chiefly brought in skeins or hanks from China and Piedmont. The skein is, in the first instance, placed on a hexagonal wheel, or swift, and the filaments which compose it are regularly wound off upon a small cylindrical block of wood, or bobbin. It is the work of five or six days to wind a single skein, though the machine be kept in motion for ten hours daily, on account of the amazing fineness of the filaments of which it consists. The silk, when thus wound off upon the bobbins, is afterwards twisted by other parts of the machinery, and is then sent to the *doublers*, who are chiefly women stationed in a detached building. Here four, seven, or ten threads, are twisted into one, according to its intended size, the fine kind going to the stocking weavers, and the others to different manufacturers. Other mills erected more recently at Derby, on a similar principle, greatly surpass this in their machinery, and efficiency; but the old mill must continue to be regarded with peculiar interest, as the first establishment of the kind erected in this country.—[Penny Magazine.]

[From No. 2, of "The Silkworm."]

# INSTRUCTIONS IN THE ART OF MANAGING SILKWORMS.

[Chiefly compiled from the work of Count Dandolo, Milan, 1824. 4th edition.]

*Translated from the Italian. New-York, April,* 1835.

BY CHARLES RHIND, JUN.

[These instructions were drawn up, it appears, (in the Italian language,) by Charles Rhind, Esq., late Consul from the United States at Odessa, on the Black Sea, and who effected the treaty between the United States and Turkey; a gentleman of high respectability, as a public officer, as a merchant, and as a man of science.

They contain a most minute but concise compendium of the entire process of preparing silk, as followed in Italy; and though, from the greater congeniality, both of our soil and climate, to the mulberry, as well as to the silkworm, much of it may be supposed to be superfluous here, yet I think every word of it is richly worthy of the attention of every one who is about to engage extensively in the cultivation of silk in this country. If the entire formula is not necessary here in common cases—if the thermometer and hygrometer or barometer can be dispensed with, yet cases may occur, and doubtless will occur, in which all the information contained in this compendium may be of most essential service. If the worms can be fed here without weighing the food, there can be no harm in knowing by weight the precise quantity which experience has found most proper.

It is true the information given by the same gentleman (Mr. Rhind) respecting the mode of management, in the same business, in Turkey, is of a very different character, and that Turkey produces the best silk in the world; but it will be evident to every person of discernment, that the wretched and dirty practice of Turkey would be improved by the science of Italy. A thermometer is a cheap article in this country; and every person of half common ingenuity may construct a cheap hygrometer* perfectly sufficient to show the moisture or dryness of the atmosphere. Those who do not wish to procure them, can no doubt produce good silk, and at good profit, without them—those who wish to proceed more knowingly and scientifically, can do so, and will doubtless be gratified, by studying the Italian method given by Mr. Rhind.]

The following instructions are adapted to five ounces of seed or eggs. If the quantity be increased, the space they occupy, and the nourishment given them, can be increased in proportion.

As the worms produced from this quantity of eggs will, in their last age, or stage, occupy 500 yards of grating, the room for this purpose should be capable of containing on each side 10 yards of grating, and have sufficient height to receive 5 frames horizontally, and leave room to walk round them. If the height is greater, the other dimensions may be smaller.

## GENERAL OBSERVATIONS AND IMPLEMENTS.

The room where the silkworms are raised should have, at least, one door and one window, and it would be better there should be two or more. The windows should be glazed, that the light may enter, not only for the convenience of attending to the worms, but also for their health, as darkness is injurious to them. They should not, however, be exposed to the rays of the sun.

They should be ventilated, if possible, both in the floor and roof, or, on a level with both, to open and shut by slides. One of the low ventilators should be made in the door.

There should be a stove, and one or more chimney places. The chimney place is of much use to burn straw or chips when a blazing fire is requisite for changing the air. The stoves serve to heat the room at any time. A Franklin stove will answer both purposes.

One or two thermometers and a hygrometer should be kept in the room to regulate the heat, and determine the degree of humidity or dryness.

Another appendage is necessary to purify the air when it becomes deteriorated by the exhalations of the worms and their excrements, the putrid leaves which collect, the breath of attendants, or the use of lights at night. This consists of a bottle of strong glass, and a large mouth, with a cork stopper, and a smaller bottle. In the last is put 1 pound oil of vitriol (sulphuric acid), kept well closed with a ground glass stopper. In the larger bottle put 6 ounces common salt, 3 ounces powdered manganese, mixed with 2 ounces water, or 1 pound saltpetre. Pour on the mixture of salt, manganese, and water, or on the saltpetre, a spoonful or small wine glass full of oil of vitriol, and a white vapor is produced which purges the air. This vapor is not only more wholesome, but less disagreeable to those who breathe it. It may also be obtained by a mixture of two-thirds of pure nitre and one-third manganese, pounded and well mixed together, placed in a spoon or wine glass, on which are poured a few drops of oil of vitriol. This process may be repeated as often as necessary to purify the air.

It is also necessary to have cartoon boxes, in which to place the eggs, and others on which to place the worms when they are produced, and small tables, or baskets with a handle.

## PREPARATIONS FOR HATCHING THE WORMS.

Those who, in the preceding year, have purchased the seed, (eggs,) and have them in the cloths where the worms laid them, ought, on the approach of the proper season, to prepare them. This is the mode:

Plunge in a pail of pure water the cloths containing the eggs, and leave them there about six minutes. Take them out, let them drip for 2 or 3 minutes, spread them upon a table, and with a scraper, or knife, not very sharp, separate the eggs from the cloths. Put them in a basin and pour water on them, gently stirring them. Those that are not good will float, which can be skimmed off and thrown away. To take the rest from the water, filter them on a rag. Put them in a clean basin and wash them again with some sound light wine, and gently stirring or rubbing them. White is preferable to red wine. Strain off the wine, spread the eggs on cloths, place them on a tight floor, or on gratings, and in 2 or 3 days they will dry. When they are well dried, put them on pewter plates, or copper tinned, in layers, not more than half a finger high, and keep them in a fresh, dry place, free from mice, until the time for hatching them.

The greater number of cultivators of silkworms buy the seed. The color should be well looked to. It should be bright grey or ash color. The yellowish or reddish eggs do not generally produce any thing. The white have already produced.

To hatch them, artificial heat is requisite. This is produced by the stove. The eggs should be placed in cartoon boxes, in proportion to the quantity they are to contain. A box 6 inches square, with sides half an inch high, is sufficient for an ounce of eggs. Number the boxes. There should in the room be tables or gratings jutting from the wall, and an inch apart from it. If there are many of them, place one above another a yard apart. Place the boxes on the grating so that they may be conveniently examined. Let them be kept separate, that the worms may not pass from one to the other.

Place the thermometer near the boxes to ascertain accurately the heat of the place, as the chamber may not be uniformly heated, the heat being greater in the higher than in the lower part of the room, and nearer the stove than at a distance.

The eggs which are kept in the warmest place are soonest hatched. The overseer should have a man with a book to note down his observations. He should note down: 1st, the number of each box, and the quantity of eggs it contains; 2d, the day and hour in which the worms are hatched; 3d, the quantity of leaves that he gives them; 4th, the degree of the thermometer and hygrometer; 5th, whatever may appear worthy of observation.

## HATCHING OF THE WORMS.

When every thing is prepared, and when the mulberry trees have put forth their leaves, so that after ten days they may supply the aliment necessary for the worms that may be hatched, the overseer puts the eggs in a box, and marks the observations mentioned in the preceding chapter. The temperature of the chamber near the place where the eggs are put, should be 63½ degrees; this is obtained by increasing the fire, should the tem-

* The hygrometer is a machine to show the moisture or dryness of the atmosphere. It is constructed in various ways, one of which, and perhaps as convenient and cheap as any other, is thus made: Soak a small cotton cord in a weak solution of common salt, and, after drying it, fasten one end to the plaster on the side of a room, near the corner and near the top, and extend it horizontally to the opposite corner, and passing it over a small sheave or pully, attach a weight to the end of it, which weight hanging against the wall will rise or fall as the cord contracts or discharges moisture. The effect will be improved by passing the cord two or three times back and forth round a corresponding number of sheaves. A scale of paper or wood may be placed against the wall, graduated to suit the fancy of the constructor, and a small index attached to the weight to point to the degrees.

perature be less, and by opening the ventilator, and even the door, should it be greater. This temperature should be observed two consecutive days. On the third day the temperature is raised to 66; on the fourth to 68; on the fifth to 70; on the sixth to 72; on the seventh to 75; eighth, 77; ninth, 79; and on the tenth, eleventh, and twelfth, to 81 degrees.

It is to be observed, that the earlier or later hatching of the worms depends not only on the heat of the stove, but also on the manner in which the seed has been kept during the course of the year. If it has been kept in a temperature rather warm, it will hatch sooner, and *vice versa*. When the time of hatching draws nigh, the seed should be stirred once a day with a spoon—not with the fingers.

When the eggs assume a whitish color, indicating that the worm is already formed within, pieces of white paper are placed upon them, pierced, that dust may not collect there. These pieces of paper should cover the whole box. Upon the paper should be placed small twigs of mulberry, having three or four tender leaves, and these should extend over the whole box. The worms, almost as soon as hatched, pass through the holes in the paper, and attach themselves to the leaves; the paper is then replaced by a fine net.

But few worms are hatched the first day, and being few, it is better to throw them away; but if it is wished to keep them, put them in a corner of the sheet, distinct from the others, which may be hatched on the subsequent days, and in order to make them equal with the last, on the two following days give them only half the quantity of leaves given to the others, as it is of much advantage to have the worms alike.

When the temperature of the apartment reaches 75 degrees, the atmosphere becomes too dry, as the hygrometer will indicate, and may injure their growth. Then place in the room two plates of water, of about four inches diameter, and the evaporation will temper the dryness. The room for the worms is supposed to be prepared.

When first hatched, they occupy but little space, and may be left where they were born until the third change, occupying as at first (the directions are understood to be given for five ounces of seed) an area of about four yards square; at the second change eight, and at the third nineteen. This being understood, gratings (made of reed in preference), sufficient for this area, are placed in the room, and the corresponding numbers, written on slips of paper, are attached to them.

Whether the worms are kept in the room where they were hatched, or removed to another, the first day the thermometer should be at 75 degrees, for the heat should be diminished in proportion as the worm grows, and gathers strength.

If a cold unfavorable storm should retard the developement of the leaves of the mulberry, and make the cultivator apprehensive for the fate of his worms, the temperature should be diminished, and this will retard the hatchings; and if the worms are already hatched, will diminish their hunger. But it should not be reduced lower than 70, or 68 degrees, and the diminution should be made gradually.

When the newly hatched worms go out in great abundance, and a bubbling of the worms is seen, place twigs on paper with a number corresponding with that on the box, so that those hatched at the same time may be near each other. The twigs should not be taken up with the fingers, but with a hook, so as not to touch the worms. The twigs should be placed apart from each other, that there may be room for placing between them leaves finely cut, and the branches may be emptied of a portion of the worms, if they are too thickly crowded.

In order to have a proper distribution, divide each sheet of paper into four parts; and in this manner the worms produced from one ounce may be easily distributed on four sheets, which they should occupy till the first change. The remainder of the worms are distributed in the same manner; then a few tender leaves finely cut are given them, distributed so that by degrees the entire superficies of the sheet may be covered with worms.

All the worms are generally hatched in two, or perhaps three days; whence the first will be a little larger than the second; and as it is of much importance to have them of the same size, it is necessary, at first, to give them (the first) less food, and to keep them in a place where they shall have less heat.

If the worms are carried from the chamber where they are hatched to another, no other precaution is necessary than to prevent their taking cold; but if they are carried to another house, it is necessary that every sheet of paper should contain all the worms of an ounce of eggs. The sheet being divided into four parts, the worms are easily distributed on four sheets; and if they are too thick in one part, it is easy to equalize them.

In transporting them, let them be well protected and covered, that nothing may touch them.

### ON THE NOURISHMENT OF THE WORMS.

The leaves of the mulberry are the only food of the silkworm. These should not be given to the worms as soon as plucked, but should first be kept in a cool airy place five or six hours; neither should they be too dry and hard, particularly at first; they should never be given when wet; and if it has rained, they should be dried, either by placing them on a clean pavement of tiles, turning them, or let the water run off by placing them on a sheet folded in form of a bag. If necessary, they may be preserved two or three days, keeping them in a cool place, and not much heaped together, stirring or moving them from time to time.

It is necessary to clip the leaves, taking away that which the worm does not eat, and the more carefully the smaller the worm. It is of less importance to do this after the fourth change. It is necessary to cut the leaves for the worms, that they may eat them the more easily.

Generally the leaves should be distributed to the worms four times a day, that is, every six hours. In this way they have time to digest, and always eat with appetite all the leaves you give them; and in this way the bed or residuum of the leaves is less, which, together with the excrement, corrupts the air, especially in the last changes. If, however, it is seen that they have a good appetite, or, for example, if they should eat in one hour all the leaves of one feed, then, at the expiration of *three* hours, an intermediate feed may be given them, consisting of half the usual quantity. As the appetite corresponds with the state of their health, and they eat less when near a change, or a little after they awake, attention should be paid to this in giving them leaves.

The changes have been spoken of. They change their skin, which does not grow in proportion to their body. It splits, and another succeeds. This change produces on the worms a kind of sickness, which first renders them weak, then drowsy, (and then it is said they sleep,) and they are weak when they awake. The greatest care should then be taken of them, especially to maintain the necessary degree of heat. The changes take place four times while they are on the grating, and twice in the cocoon.

### OF THE CHANGES OF THE WORM.

We will now proceed to point out what should daily be done in the management of worms during the first four stages, or ages.

#### FIRST AGE.

When the worms are carried to the place where they are to be fed until the first change, the temperature of the room should be 75 degrees. The leaves of large size may be given to them in proportion to their growth. Their food, divided into four feeds, should consist of

*First day*—2 lbs. of leaves very finely cut.

*Second day*—4 lbs.

*Third day*—8 lbs. If their appetite is great, give them an intermediate feed.

*Fourth day*—4½ lbs.: because, the change approaching, they eat less; the last feed less than the first.

*Fifth day*—1 lb.: to be distributed when it is wanted, as the greater part of the worms sleep.

#### SECOND AGE.

The temperature of the room should be from 72½ to 75 degrees. As at this age the worms produced from five ounces of eggs should occupy forty yards of grating, these should be prepared.

The worms awake successively, but leaves should not be given them until all are awake, in order to keep them equal; nor will the first suffer, even though they should have been twenty or thirty hours awake without eating. It is necessary to prepare six pounds of branches, and the same quantity of leaves, finely cut. If it is observed that many of them endeavor to leave their respective sheets, they should be removed, commencing where they are thickest.

*Sixth day*—Spreading gently the branches over the worms,

let one branch be about a finger's length from another, and thus cover the entire paper. Put the branches which are covered with most worms on the tables, or basket, for moving them. Place them on the new grating, 40 sheets of which, growing by degrees, they will, at the expiration of this change, completely occupy. If, after the removal, worms should still be found on the frame bed, let them be collected in the same manner. These directions will serve for all the removals at each subsequent change. The leaves of the branches will serve them for their first feed. After an hour or two, give them two pounds of leaves, distributing them in the interstices between the branches, that the worms may spread. They should not however be too much scattered; but should be collected with a brush. During the remainder of the day let the remaining feeds be given them.

The leaves of the first bed are collected and carried out of the room to be cleaned and dried.

*Seventh day*—Twenty pounds of leaves are necessary for the four feeds, given every six hours. The first being less, and the two last consisting of a larger quantity, continue to enlarge and regulate the divisions of the grating.

### THIRD AGE.

*Eighth day*—Twenty-two pounds of leaves should be supplied. The two first feeds should be abundant; the last scanty, as the worms begin to become drowsy.

*Ninth day*—Six pounds of leaves are sufficient, to be scattered lightly, as required, as many will now be asleep.

*Tenth day*—Ten pounds of branches, and a like quantity of leaves, are sufficient; and it is necessary to prepare ninety-five square yards of grating. The thermometer should be from 70 to 72½ degrees. When the worms are awake, by means of branches and drawers they should be carried to the new gratings. When they have eaten the leaves of the branches, give them for their second feed five pounds of leaves; and for the last, the remaining five pounds. The leaves of the old bed should be carried out of the room, and the worms which have awaked late collected and placed near the stove, and fed with more leaves, to equal them to the others.

*Eleventh day*—They will consume this day sixty pounds of leaves. The last feed should be more abundant than the first, as the appetite of the worms is on the increase.

*Twelfth day*—They require sixty-five pounds of leaves, and the first feed should be more abundant than the last; as the change is approaching their appetite diminishes.

*Thirteenth day*—Thirty-five pounds of leaves are sufficient, many worms being already drowsy; and the leaves should be given to those only which continue to eat.

*Fourteenth day*—Eighteen pounds of leaves are sufficient to be distributed as wanted. The worms are preparing for the third change, and require every attention, that the temperature of the room be not changed; not to make the ventilation too great, or change the air by opening the ventilators; and if the weather be moist, or oppressive, it is necessary to light a blazing fire of straw, chips, &c.

*Fifteenth day*—Almost all the worms are asleep, and leaves should be given only to the few not yet drowsy; and should some be already awake, they should be made to fast, to make them equal to the others: no fear of their suffering for it. If the worms have hitherto been left in the chamber where they were hatched, it is now time to remove them to the room where the cocoon is to be formed. It is necessary to prepare for the fourth change, which now requires two hundred and twenty-five yards of grating. The thermometer should be from 68 to 72½ degrees. But if, on account of the heat of the room, it should be higher, it will not be injurious, provided the air be not stagnant or close, which is prevented by opening the ventilator and door, if necessary; lighting a fire in the chimney or ventilating stove.

### FOURTH AGE.

*Sixteenth day*—When all or nearly all the worms are awake, there should be ready 25 branches and 40 pounds of leaves, cut large. The removal is made in the customary way to the new gratings. As soon as the worms have eaten the leaves from the branches, two good feeds are given them, dividing unequally the 40 pounds of leaves, the second portion being the larger. They then distribute themselves on the grating. The worms which awake last are put on a separate grating.

*Seventeenth day*—110 pounds of leaves are required to be given them; a scanty feed the two first times, and the last more abundant.

*Eighteenth day*—150 pounds of leaves are required. The two last feeds to be more abundant, as the appetite is on the increase.

*Nineteenth day*—They will consume 170 pounds of leaves; and as the time of change again approaches, the first two feeds should be more abundant.

*Twentieth day*—They require 85 pounds of leaves in smaller portions, as the greater part of the worms are asleep.

*Twenty-first day*—20 pounds suffice, to be distributed as wanted: almost all being drowsy.

*Twenty-second day*—They complete the fourth change, and awake. In the course of this age it is frequently necessary to change the air, especially if there is a noisome and suffocating smell, and if the hygrometer indicates moisture. If it is not cold or windy, the windows may also be opened. The degree of heat should not, however, be diminished. Use may be made of the apparatus for purifying the air.

### FIFTH AGE.

The care of the worms in the fifth age, that is, after the fourth change, is the most important and most difficult; because they are, much more than in the preceding stages, subject to disease from the following causes. 1st, The moisture arising, as well from the worms themselves as from the leaves. 2d, The moisture of the atmosphere, and particularly when stagnant or confined. 3d, The unwholesome exhalation from the excrement of the worms and the putrefaction of the leaves. 4th, Keeping the worms too crowded on the gratings, by which their respiration is impeded or rendered more difficult. It is important to know these causes of evil, in order to prevent it before it takes place.

The moisture is ascertained by the hygrometer. It is remedied by opening the ventilators and burning in the chimney chips of wood and dry straw; and if the external air is neither cold nor moist (which may be ascertained by placing the thermometer and hygrometer in the open air), by opening the doors and windows, the hygrometer will show when the moisture is dissipated; the unwholesome exhalations are known by the stench. It is the vulgar opinion that this may be remedied by burning odoriferous substances, or by evaporation of vinegar; which, however corrupt, still move the air. These bad odors, which are mixed with the atmospheric air, are destroyed by effluvia of the gas produced by the bottles as previously described. These should be carried around, that the vapor may be spread in all parts of the room. The operation to be repeated when necessary. We have already spoken of the necessity of giving the worms the leaves free from wet, and of the mode of drying them; let us now proceed to the daily instructions.

In this fifth stage the worms produced from 5 ounces of seed will consume about 3360 pounds of leaves, and will occupy, gradually extending themselves, 500 square yards of grating.

*Twenty-third day*—For this day are required 60 pounds of branches and 30 pounds of leaves. The worms are removed by means of the branches and the drawers or tables to the new gratings. The leaves are divided into two feeds, and in the distribution the cultivator is to be governed by the appetite of the worms. If any of the worms awake late, they are to be collected and put in a warm place with more food.

*Twenty-fourth day*—180 pounds of leaves are necessary, divided into four feeds. For the first, 25 pounds are sufficient, to be increased so that the last may be 65 pounds.

*Twenty-fifth day*—280 pounds should be prepared. For the first feed 65 pounds, and for the last 80 pounds. The worms now would eat more, but it is necessary to leave them time to digest the leaves that have been given them.

*Twenty-sixth day*—360 pounds are requisite; 80 pounds in the first feed, to be successively increased.

*Twenty-seventh day*—540 pounds are wanted. The first feed 100 pounds, the fourth feed 140 pounds. But if, in one hour, they eat all the leaves of one feed, give them an intermediate one. Their wants, more than any thing else, should regulate the quantity.

During this and the following day, it is necessary to change the beds. Not having new gratings, the branches loaded with worms are placed on the tables, so as to free a part from the grating, from which they are taken in the customary mode, the

sheets of paper with the bed. New papers are substituted, on which are placed the leaves with the worms, care being taken not to bruise them. In this way, by degrees, all the grates are cleaned, employing the time and number of persons necessary.

*Twenty-eighth day*—The worms now eat ravenously, so that they require 650 pounds of leaves, to be given them in four or five feeds, and, if required, give them intermediate feeds.

*Twenty-ninth day*—They require 600 pounds of leaves, and the first repast should be more abundant than the others, as the appetite in some begins to diminish. Intermediate feeds to be given when necessary.

*Thirtieth day*—The appetite is less, and 440 pounds are sufficient, divided into four repasts, the first of which will be the most abundant, and the last the most scanty. For the last feeds the leaves of the old plants should be preserved. This day the second cleansing of the gratings takes place in the manner previously directed. On this occasion, the flame to change the air will be necessary, as well as to go round the room with the vapor-producing bottles for purifying the air. Attention must also be given to the hygrometer and thermometer, to temper the moisture and the coolness of the atmosphere.

*Thirty-first day*—Only 330 pounds are required, to be distributed as wanted, as many of the worms eat no more, or eat little. Continue to clean the gratings, as it is very necessary for the worms to respire a pure and wholesome air, therefore the ventilator should be kept open, and the vapor should be used.

*Thirty-second day*—The worms give signs of complete maturity.

These signs are: 1st, when they mount upon the leaves given them and do not eat; 2d, when they keep erect the upper part of the body, which, seen against the light, appears transparent and of a yellowish white; 3d, when they go toward the sides and mount them, showing a disposition to go elsewhere; 4th, when the wings of the bodies contract, and they have changed the greenish color of their bodies into a golden yellow; 5th, when the skin of their neck is much shrunk; 6th, when the body becomes more soft, like paste; 7th, when taken in the hand and seen against the light, they have, as it were, a greenish yellow transparency, or the color of a yellowish white grape perfectly ripe.

Seeing in worms these signs, it is necessary to prepare the brushwood. In the mean time it is necessary to nourish those which still eat.

### OF THE BRUSHWOOD, AND THE MODE OF PLACING THE WORMS UPON IT.

The manner of preparing the brush, upon which the silkworms form their cocoons, is sufficiently known. It should be made so that the worm may easily climb upon it, and place itself between three or four slight twigs, to which it may attach its threads, so that they should not be too thick, nor too wide apart. If they be too thick, they prevent the necessary ventilation, and often produce double cocoons, in which two worms are enclosed, and which are of less value than the others. Let the brush be placed on the gratings, and not upon the papers, so these may be changed when necessary to clean. Let this be done as before mentioned. When many worms are seen to mount, it is proper to place the brush near the mature worms; but there is no harm if there should be some delay, as in the mean time they discharge the excrement. At this time it is well to admit the external air, provided there be no wind, and the thermometer not lower than 68 degrees. The worms should not accumulate on one part of the brush; which is prevented by laying other branches near where they collect. If some of the weak, dull worms remain on the gratings, and some from weakness fall from the brushwood, they should be gently taken up and put upon the table and carried to another chamber, where the temperature is about 72½ degrees, and slightly ventilated. Those which will not eat more should be carried to the brush upon a branch horizontally placed, if there is danger of their falling through weakness. When all the worms are upon the brush, let all the gratings be cleaned, the papers removed, and the chamber well cleaned, for which purpose all the means pointed out should be used, to have the air warm, pure, and well ventilated, but no wind should be allowed to enter, which could be fatal to the worms at work.

It is also important that the air be not too warm and dry, as the worms will not produce so fine silk. The worms managed in this way complete the cocoon on the seventh day from that in which they commenced mounting the brush; but it will be well to wait till the eighth or ninth before collecting them. Strip the brush regularly, commencing at the lowest part; but in collecting the cocoons, never press them together where they may be crushed; and if they are not yet finished, do not mix them, and thus injure the others.

### OF THE WORMS DESTINED TO MAKE SEED.

It is proper to give some instructions respecting the seed to be collected for the following year, as it is very useful to provide the seed at home with due care rather than purchase it; and it is an erroneous supposition that it should be changed, unless, owing to bad management or other circumstances, the worms remaining weak have formed bad cocoons. If it is wished to make a similar quantity of seed to that used (5 ounces), a sixteenth part of the cocoons collected is required. The cocoons to be selected for this purpose should be of pale straw color, of fine silk, and hard, particularly at the extremities, and a contracted circle in the middle. The largest should not be chosen. The male cocoons are not easily distinguished from the female, but it is generally observed that the former are more pointed and smaller, those of the females rounder and larger; although these signs cannot be entirely relied upon, it is proper, according to them, to separate the two sexes. Let the cocoons thus selected be kept in a dry room, at a heat of 66 to 72½ degrees, spread on gratings covered with blotting paper, in layers not more than three fingers deep.

At the expiration of 15 days, the grubs commence coming forth, and a farther space of 15 days will elapse before all are produced. The warmer the room, the sooner will they come forth. This room should be darkened, or have but little light. Soon after they have left the room, the different sexes meet and copulate; and this they soon do, if the males are carried near the females, which is effected by taking them gently by the wings. As soon as this is finished, they must be placed on a linen cloth stretched on a frame prepared for this purpose.

They should be kept as much as possible in the dark, for in the light the moths weaken themselves by constant flapping of the wings. The cocoon from which the grub has issued must be removed, that it may not be in the way of those that have yet to come forth. If more of one sex come out than of the other, those that are over should be put in a box, and kept in the dark, to be copulated as soon as there are others to put with them. If the number of males exceeds that of females, the excess may be thrown away; if the females exceed, they should be kept to be joined with males which have been connected with another. The male and female should not be left in connection more than six hours. They may be separated by taking both by the wings, or even by the bodies. The males should be kept in a box, to be used if there should be an excess of females. The females are then to be carried into a well ventilated room, but almost dark, and placed upon a linen cloth stretched upon the floor. A square yard of cloth can contain six or seven ounces of seed; as much as is generally produced from three pounds of cocoons. The grubs should be kept separate, so that one may not interfere with another. The females may be left upon the cloth 36 or 40 hours. All the pieces of cloth where the eggs have been deposited should be well dried, and loosely rolled up, and put in a dry, cool place, where the heat should not be more than 65 degrees, and where in winter it does not freeze. It may be well to place them on a frame attached to the roof, to avoid mice, and to protect them from insects which may destroy them.

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MR. HUSSEY'S GRAIN CUTTER.—We are gratified to learn, as we do from the following, that our wheat-growing farmers are to have an opportunity the present season to examine the operations of the machine recently invented by Mr. Hussey, of Cincinnati, for harvesting grain, and which has excited so extensive interest the past year.

*Mr. Tucker*,—In answer to the inquiries of UNUS: having by use of the Grain-Cutting Machine of Mr. Hussey, last summer, become convinced of its value, I ordered one at Mr. Bill's machine shop. The price he gave me $150. I am able

also to state, on the authority of Mr. Hussey's agent, that he will make use of his machine in the several principal grain-growing counties of the state the coming harvest season. As we, that is, the farming community, have been imposed on by puffers, he proposes, instead of taking this course, to make exhibition of its usefulness.

Having no interest in the machine, except as a well-wisher to every laboring man, I do not hesitate to urge more freely the farming community to examine the machine for themselves when in their neighborhood. I am yours, Wm. C. Dwight.—[Genesee Farmer.]

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*Notices of some of the Gardens and Nurseries in the Neighborhood of New-York and Philadelphia; taken from Memoranda made in the Month of March last.* By C. M. H. [From Hovey's Gardener's Magazine.]

Nurseries of D. & C. Landreth.—This fine establishment we were unfortunately deprived of the pleasure of seeing in our recent visit. In the fall of 1831 we walked through part of the grounds, and although we were then unprepared to take notes, yet we carefully observed several of the fine things which enrich this place—an account of which we think will not be uninteresting. What struck us very particularly at that time, was several fine hedges of the Arborvitæ of both species (Thuja occidentalis and orientalis), which were beautifully grown, and so thick that they completely screened one part of the garden from the other. We have never since seen any thing of the kind at other places in that neighborhood, or in our vicinity; and when we observe the Arborvitæ in our gardens, it reminds us of this beautiful hedge, and we are astonished, that they are not made to take the place of many of the unsightly ones which exist in many gardens, disfiguring the grounds with their naked branches, and presenting, when divested of their foliage in the winter, a bare and scraggy appearance. The object of a hedge is generally to keep from the grounds cattle and other animals; though in some instances, they are only set to obscure one part of the garden from the other, or to hide some disagreeable object from the eye. In the latter case, we are sure nothing can be more desirable than the Arborvitæ; the beautiful deep green appearance of the foliage in the summer, and its cheerful and lighter hue in the winter, added to which its agreeable odor, at once give it a claim over any deciduous shrub. If the object of a hedge is entirely to keep out animals, we do not know how far the Arborvitæ may be employed; but few hedges have ever come under our observation which would answer this purpose any better than this, unless it were the Acacia, the large and strong growth of which renders it unsuitable, except round extensive farms. We hope to see the Thuja more extensively grown, both in the pleasure grounds, intermixed with the spruces, firs, pines, and hemlocks, and also formed into hedges, especially when the object is to break the view of the kitchen garden, back entrances of the house, or any thing not in keeping with the scenery.

We here first saw that curious plant, the Maclura aurantiaca (Osage orange), which retains its beautiful foliage until very late in the autumn. It is said to be an elegant object in its native clime (the Arkansas territory), being loaded with its golden fruit; when we observed it, it was full of green fruit; here was also fine plants of the Gordonia pubescens, nearly related to the Camellia; Clethra acuminata, and the Virgilia lutea. The green-house plants were not then placed in their winter domicils, but were disposed around the garden. The orange, lemon, and shaddock plants, were in fine health and full of fruit. We here saw a very large plant of the Rhododendron arboreum, which was then very rare. It has since become more common, and is to be found in most choice collections; yet we have never known it to flower, with but one exception, in our vicinity.

The Messrs. Landreths' nurseries are situated on Federal street, about two miles from the centre of the city, and altogether contain nearly forty acres of ground; part of which is devoted to the cultivation of vegetable seeds, which are sold at their seed establishment in Chestnut street. They have raised several beautiful seedling roses, and one fine Camellia, of which Mr. Landreth showed us a painting; it is called Landrethii. We believe one of the earliest collections of the Camellia was first made by the Messrs. Landreth.

A floricultural work, in folio numbers, with four colored plates each, was commenced some time since by the Messrs. Landreth, the letter press of which was conducted by Mr. D. Landreth, Jr. Although we had never seen a copy of the work until our late visit, yet, from a hasty glance, we should pronounce it a very excellent one, considering the present state of floriculture in this country; the difficulty, however, attending the selection of a good botanical draughtsman, and persons to color the plates true to nature, Mr. Landreth informed us, had induced them to give the work up; not, we understood, and gladly too, from want of patronage, but from the above causes; we hope to see them resume their work before long, with renewed exertions. Specimens of plants are certainly not wanting to render such a work not only useful and valuable to the amateur floriculturist, but a desirable one for every drawing room or parlor.

R. Buist's Exotic Nursery, 12th, near Lombard street, March.—It is but a few years since this place was taken by Mr. Buist; it adjoins the one which was owned and carried on by Mr. Thomas Hibbert; and so rapid was the increase of horticultural taste, that he extended his houses in a few years to nearly three hundred feet of glass. Mr. Buist was latterly a partner in the concern, but upon the demise of Mr. Hibbert the plants were prized and sold at auction. Mr. Buist bought in such as he desired, and the rest were sold to various purchasers, commanding good prices. The widow of Mr. Hibbert now manages and carries on the place, some account of which will be found in the course of our remarks.

We were highly pleased with the neatness and high keeping of every part of Mr. Buist's establishment; he is a very modest, unassuming, and intelligent gardener, and deserves the praise of every floriculturist, for his industry, as well as his endeavors to introduce to our gardens every thing which will add ornament or beauty. His establishment has been raised to its present state by his own individual exertions, since he has taken the place now occupied by him; Mr. Buist well understands his profession; his plants are grown uncommonly well, and his collection embraces a large number of species, including the most rare and choice kinds. In that department of gardening the most useful, but generally the least understood by most gardeners, the propagation and multiplication of plants, he is very skilful; and the rapidity with which he has increased his stock of several species is almost astonishing.

Mr. Buist wrote a large part of the American Flower Garden Directory, which appeared while he was in company with Mr. Hibbert. The character of the work is well known, and highly appreciated by those who have profited by its advice. A few years ago he visited Scotland, and on his return brought out with him many fine plants, which he has since increased, and are now to be found in our green-houses. The risk of importing many kinds of plants is so great, that few venture to introduce them; and unless some one, who understands their management, accompanies them on their voyage, and treats them with the most particular attention, they are almost sure to die. Mr. Buist succeeded in bringing home alive some species, which would, had it not been for his care, have long been strangers to our gardens.

The range of green-houses is upwards of one hundred feet in length, it is built with a span roof, though in some places it is not glazed, and is divided into five compartments; he intends enlarging it the present summer, and also to build a house purposely for his Camellias, of which he has a very fine collection. The latter he informs us he should build to face the north, as he thinks our hot sun altogether prejudicial to the health of the Camellia. One thing we noticed in his compartment for his Camellias, which we believe he recommends in the American Flower Garden Directory, was the *white-washing*, with a very thin coat, the whole under surface of the glass. We think ourselves, that such a practice would give a more healthy and bright appearance to the foliage of Camellias, than if the hot sun was permitted to shine on them all the winter, for whether it was to this alone or to the general well appearance of Mr. Buist's plants, his Camellias were in as flourishing a state as any that we have ever seen. Perhaps *ground* glass,

in a house devoted wholly to Camellias, would be superior even to the best and clearest crown; we should like to see the experiment tried; it is well known that they should be shaded from the sun from April to September, and we have no doubt but their flowers would last much longer, and preserve their colors better, were they so protected during the whole winter.

The arrangement of the plants throughout the whole range is highly creditable to Mr. Buist's taste; and the general good order which exists throughout his establishment, where propagation is continually going on, is to be much commended. Too little attention is paid to neatness by many nurserymen. Commencing our walk through the houses, we were first delighted with an elegant specimen of the Erica rubella, in full bloom; the flowers open at first a deep red, and gradually change to a light blush; Mr. Buist valued this plant very highly; Metrosideros lanceolata, Acacia longiflora, and other species, were throwing out flower buds. We here saw the Arbutus Andrachne with its pretty flowers; it is a very desirable species of this elegant genus; Brunia capitata, another plant admired for its fine foliage, and the graceful form of its pendulous branches. What riveted our attention more particularly was several species of the splendid genus Amaryllis, in full bloom; among them was A. psittacina, venusta, Johnsonia, formosa, superba, &c. Mr. Buist has a very fine collection, which he cultivates with greater success than any we have ever seen.

The second compartment is used as a stove, and is filled with several rare plants. We here observed the Tropæolum pentaphyllum, the singular flowers of which so nearly resemble the shape of the canary bird as to give it the name of the canary bird flower. It is now called Chymocarpus pentaphyllus, and made the type of a new genus by Mr. D. Don; it is a native of Buenos Ayres, and was introduced into England in 1834; we believe it has flowered for the first time in this country at two different nurseries the present winter; it is easily propagated by cuttings, and will no doubt soon become common; Petunia phœnicea, the most beautiful annual that has lately been introduced, Mr. Buist has a fine stock of; Mimulus Smithii we here also observed, but the blossoms were not near as large, or so distinctly and strikingly spotted, as those we saw at Mr. Pratt's. The pots were standing on the stage with other plants, and their want of vigor may be attributed to their not having been placed in pans of water. Fine plants of the Ficus elastica, Combretum purpureum, and Ornithogalum niveum, the latter throwing up dense heads of its snowy flowers; Francoa sonchiflora, a new Chilian annual, though not as handsome as the F. appendiculata, Mr. Buist has fine plants of; it has never flowered in the gardens in our vicinity, the seed having been this year introduced; Tecoma capensis, with its climbing stems, was throwing out its clusters of orange red flowers. In this compartment a small pit was filled with cuttings of every description; it was placed on the north side of the stage, partially shaded from the sun, but receiving plenty of light from the glass on the north.

The third house is mostly filled with Geraniums, which are exceedingly well grown. Mr. Buist has a very choice collection, which, with Mr. Hogg's, of New-York, may be said to be two of the finest in the country. We observed here the variegated stock, which we have not before seen since the fall of 1830, in the vicinity of New-York; Mr. Buist thinks it partakes of the variegated character from old age: although this may be the cause, still we are rather doubtful of the fact, as some of the plants we saw several years since were quite small, and could not have been more than one year old, and we have ourselves grown the various kinds of stocks to a considerable age, and have never had them sport in this manner. Corræa speciosa, with its exquisite tubular shaped corollas, was covered with blossoms; Fuschia mycrophylla, and some other new species. In the next compartment, the last but one of the range, are placed Mr. Buist's Camellias; the collection is very choice, and includes a large number of the finest kinds. We saw here C. gloriosa, Goussonia, dianthiflora, dahliaflora, anemoneflora alba, althæflora, Rossii, fulgens, compacta, conchiflora, maliflora, Fairlea, &c., each with several blossoms fully expanded; C. Fairlea is a very beautiful kind, the colors being red and white, mottled. Mr. Buist had three or four large plants of the maliflora, one of which had expanded twenty flowers; it was a splendid object; the blossoms opening at the axils of several of the leaves near the top of each shoot, giving them the appearance of dense spikes; C. dahliaflora is rather an indifferent variety; C. conchiflora, though more common than several others, should be in every collection. There was a number of other fine varieties in full bud. We have mentioned before his practice of whitewashing the glass in this compartment, to prevent the hot rays of the sun from scorching and burning the leaves. A fine specimen of Rhododendron arboreum hybridum had expanded six or eight heads of its gorgeous flowers. What an imposing spectacle would a house present, filled with the different species and varieties of Camellias and Rhododendrons, including the true R. arboreum when in full flower? It would be the very acme of floricultural splendor. We hope that something of this kind will be attempted in our vicinity; for certainly the means or taste cannot be wanting to accomplish the object.

Mr. Brist has a fine collection of Roses, among which are some of the most beautiful kinds; he also has raised several from seed, which are known by the names of R. Websterii, Jacksonii, purpurea, &c. The animated Daily is a very desirable rose, as it retains its form for many days, closing up every night, a peculiarity quite uncommon. The collection of dahlias is very good, as they are also at several other nurseries in Philadelphia. Mr. Buist has also a collection of herbaceous Calceolarias, including eight or ten of the most showy varieties; he intends the present season to raise a large number of grape vines, and had collected together most all the valuable kinds.

Mrs. Hibbert's Florists' Nursery.—This, adjoining Mr. Buist's and entered from 13th street, did not present any thing interesting additional to what we have just named at the latter place; we here, however, found two or three fine plants of the double white Camellias, covered with blossoms. The collection of geraniums and roses is very good. We had not time to take particular note of what we saw, but considering that Mrs. Hibbert manages her establishment wholly by her own exertions, the plants look extremely well. The houses are built separately, though connected by entrances, and without any particular regard to the situation—some facing the south, and others the west. Mrs. Hibbert informed us she sold a large number of bouquets of flowers during the season; we should hope, that those who are fond of flowers and plants in the city, and are purchasing, would not forget her claims to a portion of the public patronage.

There are several other fine private and public establishments, which contain many rich botanical and floricultural gems, which it was not possible for us to visit; among the former was the garden of J. Longstreth, Esq., and the latter, Bartram's botanic garden and nursery, now owned and carried on by Robert Carr. We regretted much that we could not avail ourselves of the pleasure of visiting his place. The collection of plants is very large, and as long ago as 1830, when the committee appointed by the Pennsylvania Horticultural Society to visit the various gardens in the neighborhood made their report, it contained thirty-six sorts of Camellias. Mr. Carr has also a large collection of the Cacti. McMahon's Nursery, about three miles from the city, contains a rich collection of plants. It was established by the late B. McMahon, a distinguished and enterprising horticulturist, and is now continued by his family.

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[From the Maine Farmer.]

On Agricultural Accounts.—Mr. Holmes: However pernicious an idle habit may be, so far as the labor of hands is concerned, I much doubt whether intellectual idleness is not much more so. It is true, mere ideal speculation is of little use at any time, and is often injurious, it being only the busy workings of fancy put in motion by that unbounded curiosity and love of excitement so natural to the human mind. This disposition to gratify fancy is a serious obstacle to improvement in the pursuit of knowledge, especially in agriculture, where we are so likely to be deceived by appearances resulting from so many combined causes, frequently blended together in producing some one single effect. But often I be-

lieve a lazy mental habit has something to do in this. It is so much easier to "guess" than it is to qualify ourselves to judge correctly, that we frequently make a hasty decision, which in fact is the merest guess-work. Now it is evident, in the pursuit of knowledge, in economizing many subjects, we cannot have the advantage of mathematical demonstration; and in the study of agriculture this is eminently the case. This, however, should not deter us from introducing them wherever practicable.

It has been said, "Maine is a good stock and grazing country, but we never can raise our own bread." Now I admit, the question whether we can raise bread-stuff, and how much, does not depend on mathematical calculation. But it is a fact, that some farmers whose means are not the best, do raise enough and to spare. Why then cannot others? Certainly they may, by the same or better management; yet a question then remains of vital importance to the farmer, which is, all things considered, the most profitable? This can only be determined by mathematical calculation founded on accurate accounts, by which the cost of rearing different kinds of stock and crops can be ascertained and compared. Until this is done nothing certain can be known. That some men may thrive better, who raise much stock, than their neighbors who raise more bread-stuff, may be true, and yet not determine this point.

The acquisition of property depends on a combination of circumstances so various, that evidence of this kind cannot be decisive. But there is a way by which this may be done, and this is by keeping correct farming accounts. By this a farmer might be able to determine how much each kind of produce costs him a bushel, and how much the expense of rearing each horse, sheep, ox, cow, and the relative profit of each.

Now, I don't believe one farmer in a thousand knows any thing about this. No, not one in a thousand, not even excepting the sage author of the sentiment we quoted, respecting the capacity of Maine for raising stock and bread-stuff. What superstructure then of real excellence can be built on such a miserable, sandy foundation? It is high time to begin to look into these things. The farmers of Maine have as much "mother wit," as any people in the world: all that is wanting is to make a good use of it. Many a one might shine as a star of the first magnitude by using one half the ingenuity directed to some useful subject of investigation, which has hitherto been employed in devising means to "hook" pine logs, shaving notes, or cheating their neighbors in some more honorable way.

I have adverted to the comparative profit of raising stock and bread-stuff, as a proper subject to be determined by calculation; but this is only one among a thousand. We want to know the comparative profit of the different crops we cultivate, whether for food for man or beast. We want to know the comparative profit of the different kinds of stock we raise, and also the comparative cost of keeping them in different kinds of food, separately or mixed. Indeed the subject is of such extensive use and application, I must dismiss it for the present, hoping some one, at least, will be benefitted by it.

J. H. J.

Peru, June, 1835.

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[From the Farmers' Register.]

*On Price—the Causes and Effects of the Fluctuations considered, and the Principles maintained applied to the Present Rage for Speculation.* By THOMAS R. DEW, Professor of Political Economy, &c., in the College of William and Mary.

[The following communication was intended by its author to appear anonymously—and it may be observed that its form still accords with that intention—though we have obtained permission to give the author's name. This mark of its origin was desirable, not only for reasons which are sufficiently obvious, but also because the facts treated of are in some degree effects of the causes considered by the same writer in his "Essay on Usury," in Vol. II. of Farmers' Register—and the reasoning of the two communications have a corresponding connexion.

The exhibition of the principles which constitute *price* in general, and the investigation of the causes of unfounded and ruinous fluctuations, may be serviceable to the agricultural community at this time, when there is every indication of the approach of one of those fits of national delusion or madness, such as occurred in the time of non-specie paying banks in this country, and such as every commercial country is sometimes liable to suffer from.

In addition to the close connexion of this and many other subjects of political economy with agricultural interests, we find ground for especial approbation of Professor Dew's manner of inculcating his doctrines, by showing their bearing on current events, and offering tests of their truth, in accessible and striking practical proofs. Without resort to some such mode of attracting attention to what is generally (though incorrectly) deemed a dry and repulsive study, the abstract truths of political economy will continue unknown to governments and to nations, long after having been established and undoubted in the opinions of reading men. Thus Adam Smith's exposure of the restrictive (or commercial) system of Europe had delighted and convinced the learned and literary community for half a century before it had any effect on the action of the British government, and his admirable work had long been a text book in the colleges in the United States, while our legislators still continued to act in defiance of its truths, on questions of national policy, and in accordance with the notions on trade of the past ages of darkness and ignorance.

Having thus expressed general approbation of the author's views, it is proper to mention an exception—which expression of dissent would otherwise be uncalled for, and unnecessary. It relates to the effects anticipated to Virginia from the present high price of slaves. That such consequences, whether immediate or remote, will follow, we have not been convinced by the author's argument.—ED. FARM. REG.]

But a little while since, as we all but too well remember, the country was plunged into the utmost distress from want of money, lowness of prices, and failure of credit every where; now we seem to be fast rushing into the opposite extreme—money is becoming very plentiful, prices have almost doubled, and commercial credit seems every where re-established. A speculating mania has been generated in our large commercial cities, and seems rapidly spreading itself through our country. If then this be a season of prosperity, it is one of hazard likewise. Now is the time for the exertion of that prudent foresight and calm deliberation, which alone can carry the man of wealth safely through those great and sometimes rapid fluctuations of prices, always attendant on the rage for speculation. I propose briefly in this communication to point out the operation of those causes which are calculated to make money plentiful or scarce, (as it is commonly termed,) and to show their operation on prices at this moment. This investigation cannot, I think, fail to be interesting at this time, and I hope will call forth the speculations of others much more competent to do justice to the subject than myself.

*Circulating Medium.*—The first subject, undoubtedly, to which we must turn our attention in an investigation of this kind, is to the currency. What is the currency? What are the items which compose it? Every thing which passes from hand to hand, and will perform the function of money, must be regarded as currency. First then come the gold and silver coins, and bank paper; these of course form a part of the circulating medium, but not the only, or even the greatest or most important portion. Bonds, promissory notes, scrip notes, bills of exchange, stocks of every description, form likewise a portion of the circulating medium. All of these pass from hand to hand, and represent value, and therefore perform the functions of money. For example, I buy a tract of land, for which I give $10,000, and pay for it by passing to the seller ten bonds of a thousand dollars each. Now this exchange is effected without a single dollar of real money, merely by the agency of credit: in the same way I might have paid for it in stocks, or by giving bills of exchange, &c. But although these are to be looked on as circulating medium, it is evident that equal quantities of them will not perform as many exchanges as money; for the value of money is well ascertained—it bears no interest whilst in our hands, and therefore it circulates rapidly and effects many exchanges: whereas the value of bonds, promissory notes, bills of exchange, stocks, &c., have a value more indefinite; and most of this species of paper, too, bears an interest while in our hands. Its circulation is therefore comparatively sluggish, in consequence, first, of the difficulty of fixing its value; and second, because we make a profit on it whilst lying in our hands, and therefore are in no hurry, generally, to get rid of it. But although this portion of the circulating medium be greatly inferior to money in the performance of the functions of circulation, yet it much more than makes up for this deficiency, by the vast amount of it which is in circulation. In England, for example, it has been computed that the bills of exchange alone in circulation are ten times more in amount than the whole money in the country: while the latter is estimated at £40,000,000, the former reaches the enormous aggregate of £400,000,000. In our country, the Bank of the United States alone does a business in exchange amounting in the year to more than $250-,000,000; while its own paper in circulation has never reached one capital, or $35,000-,000. Now, the bonds or promissory notes of individuals may be looked on as

rising, in amount, infinitely beyond the aggregate of the bills of exchange and money together. Comparing then all the items of the circulating medium, *exclusive* of money, with the money, we shall be astonished to see how insignificant in quantity the latter is, when compared with the former. The fact is, money performs but few of the exchanges of society, by actual passage from hand to hand. "In England," says Mr. Wade, "by the use of bills of exchange, bills of lading, checks, scrip notes, clearing houses, and a variety of other contrivances, aided by a vast fabric of credit taken and given in open account, money (in its common acceptation) hardly ever enters into mercantile affairs; it is the substance really meant and shadowed forth; but it rarely, as one may say, bodily passes from hand to hand." In our own country, every one, too, must have observed how rarely the exchange of large masses of property are effected by the intervention of money. In the great majority of cases, the property is paid for by the passage of bonds, bills of exchange, stocks, &c. and but a small portion by actual money. Hence what are called cash sales, if too frequent all of a sudden, in a particular neighborhood, even in times of great prosperity, will cause the property to be sold at a sacrifice, because of the great difficulty of commanding the actual money to make the purchase.

*Effect of Rapidity of Circulation.*—Having thus explained my notion of the components of the circulating medium, and shown that money is vastly inferior in amount to all the other items combined, let us now look a moment to the effect produced on the circulating medium by a rapid or sluggish circulation. And it is very evident, that while the quantity of the currency remains the same, its apparent amount and real efficacy may be either increased or diminished, merely by an increase or diminution of the rapidity of circulation. For example, $10 passing through ten hands, in the course of the day, will accumulate as much property as $100 passing only once from hand to hand. Now, supposing the whole circulating medium to remain stationary in amount, but that the rapidity of its circulation is suddenly doubled throughout the whole country, then its *apparent* amount and its *real* efficacy would be doubled likewise. With the help of these incontrovertible principles, let us now proceed to examine into the effect of the late money pressure in the United States; 1st, On the rapidity of the circulation—and 2ndly, On the amount of the circulating medium.

1st. *Effect on Circulation.*—I shall not pretend to enter into an investigation of the causes which produced the late pressure in the money market. The nation has already been fully and completely enlightened upon this subject, by men whose minds can compare with any which the world can furnish. Moreover, it would require me to enter more fully into the field of politics, than would be agreeable to myself, or suitable to an agricultural journal. Suffice it to say that the pressure did every where take place; that a general difficulty of procuring money existed throughout the country; that prices, for a season, fell every where; and that confidence and credit for a short time, in the great commercial towns, were almost entirely destroyed. First let us see the effects of all this on the exchanges in society, and then on the rapidity of circulation in the currency.

During a pressure of the kind just spoken of, the loss of confidence and fall of prices force a great deal of real and other property in the market, to be sold for payment of debts, which ordinarily remains stationary in the hands of its owners. Lands, houses, negroes, stocks of goods, &c., are thus forced to change hands, and of course increase the exchanges. Perhaps the sinking of prices generally may have a tendency to diminish the sales of the annual products of the soil, such as corn, wheat, tobacco, and sugar; but not of cotton, for the foreign market is the regulator of the price of this very important article. Hence it may be said, that a money pressure at first has a tendency, by the great quantity of property forced into the market for sale, rather to increase, than diminish the number of exchanges. Whilst, however, the number of exchanges increase, the circulating medium suddenly becomes much more sluggish, taking the whole aggregate, in performing the functions of circulation. The great capitalists who are in the habit of purchasing produce with a view to sell with a profit, when prices are falling, rather keep aloof from the purchase of raw produce, least a further fall may injure them—their capital then circulates more slowly, and in consequence of it, the annual productions of the country are not distributed with that regularity, and adaptation to the various wants of the community, as under ordinary circumstances. The body politic, in this situation, is like a patient suffering congestion in one part of the system, while there is a depletion almost to the loss of vitality in another.

Again: bonds, bills of exchange, &c., ordinarily performing the larger portion of the circulation of every country, have now a much slower circulation, and consequently less efficacy in effecting the exchanges; because as there is a general loss of confidence and credit, A, who has sold to B, is distrustful of his bonds, his bills, in fine of credit in every shape — he wants money. Money too has generally a sluggish circulation on such occasions, for every one getting possession of it, is disposed to hold it as long as possible—hard money seems to be almost the only true friend which one can get hold of in such times as those, and is consequently held with a miserly grasp. Persons will not venture it out without the best security, and on high rate of interest, obtained either directly or indirectly.*

Thus we find, first, that the number of exchanges has a tendency to increase during the first operation of a money pressure; and second, that the whole circulating medium of the country suddenly, from the very same cause, diminishes in the rapidity of its circulation, and therefore becomes less efficacious, as I have already proved.

2nd. *Effect of money pressure on actual amount of circulating medium.*—Let us now examine into the state of the circulating medium, and see whether, during a money pressure, it has any tendency to increase in quantity, so as to counteract the operation of the causes above specified. It is evident, first, that the money has no tendency to increase in quantity; because, first, the banks are distrustful of the credit of individuals, and of one another; the curtailment forced on one communicates to another, and finally all are obliged to curtail their accommodations and issues—hence a decided diminution in bank paper. Secondly, gold and silver in actual circulation diminishes in amount, because of the universal disposition to hoard, in consequence of loss of confidence. Thirdly, bonds and bills of exchange will generally diminish in amount, because these depend on credit altogether, and the first effect of the pressure is the destruction of confidence, and the ruin of the whole fabric of credit. Fourthly, stocks of every description diminish in value, or are entirely destroyed, by the disastrous operation of the times. Money, and not stocks, is what the times call for. And thus do we see, that while the exchanges increase, the circulation of the currency grows sluggish, and the quantity in actual circulation rapidly diminishes.

*Combined effect of these causes.*—What then, let me ask, is the effect of the combined operation of an increase in the number of exchanges, greater sluggishness in the circulation, and diminution of the whole circulating medium? Most undoubtedly, a continued fall in prices, until certain causes are thrown into operation, which will counteract this downward motion. Mr. Hume, in his History of England, says there is a point in the depression of nations, in the scale of circulation, below which they cannot sink. Amelioration will then spring out of the very disorder itself. So I would say in the disasters of trade and agriculture, there is a certain point of depression below which they cannot go. The self-sustaining energies of commerce are called into play, and apply the healing balm without the interference of government. Thus the causes, whose operation I have just been considering, gave a downward motion to prices in our country, until they reached that point which made this one of the worst markets in the world to sell in, and one of the best to sell from. The effect of this on foreign exchange will readily be perceived. More commodities were exported than imported. A money balance was created in favor of the nation. Hence a rapid and full current of the metals was soon seen flowing steadily into the country, and supplying the vast deficit in the circulating medium, occasioned by sluggishness of circulation, and diminution of the quantity from general destruction of confidence and credit. We all very well recollect, that a short time since, almost every paper announced the fresh arrivals of cargoes of gold and silver—and we know that, at this moment, we have more foreign coins in circulation than have been seen in the country for years past. The banks too seem generally to have drawn to their vaults large portions of the precious metals.

*Effect of importation of precious metals, and of a restoration of confidence.*—Now, whilst the importation of the metals from abroad is gradually adding to the circulating medium, and therefore partially relieving, by this means, the pecuniary distresses of the country, the number of exchanges in society occasioned by forced sales will of course have a tendency to diminish, because those sales will become less and less frequent, after the violence of the storm has already prostrated all that could not stand against it. Affairs will soon settle down to this new state of things. Many of the wealthy men of the former epoch find themselves bankrupts at the commencement of the new—others again who could command a little ready cash during the crisis, find they have suddenly become wealthy. From this point, the operations of commerce once more begin to extend themselves. Confidence is gradually restored, and with it the credit system begins to be built up again, and the large accession of money from abroad makes the money market

* An inconvertible bank paper is never hoarded in this manner. It is like fire in each man's hands, he wants to get rid of it as speedily as possible, lest it may be caught on him at a still lower point of depreciation. Hence the inconvertible paper of the Bank of England, in 1797, soon relieved the money pressure, but only to bring on evils greater still, as an inconvertible paper always will do.

much easier than before. The effect of all this is at first to raise prices gradually, and then more rapidly, as a spirit of speculation is generated. When prices are sinking, the spirit of speculation sinks likewise, because each individual is fearful of purchasing, lest he be injured by a farther fall in prices. The credit system likewise is greatly contracted, because the rapid fall in prices, and the frequent bankruptcies occurring from day to day, destroy the confidence of man in man.

Now a rise in prices is accompanied with effects the reverse of these. 1st, The credit system becomes instantly enlarged. When prices are rising all are on the alert: the energies of man are drawn forth; his hopes, which ever have an undue influence, are thrown into play, and the imagination spreads enchanting schemes and projects before him; he is disposed under those circumstances to rush into business, or to get possession of property, whose enhancement in value from the rising tide of general prosperity, is alone expected to make him wealthy. The borrower now can much more easily get money on loan than before, because general confidence is restored, and the constant rise in prices makes property a good security, which before would have been deemed very inadequate. Buying and selling too, under these circumstances, will generally be on credit more and more extended in proportion to the restoration of confidence. Now the immediate effect of the extension of credit, and the increased velocity given to the circulating medium, is to produce a superabundance of money. For, recollect, I have previously shown that sluggish circulation and the destruction of the credit system generated an extraordinary demand for money, which flowed into the country through the medium of importations. The increased velocity of circulation and the re-establishment of the credit system have just the opposite effect, viz. to increase the apparent amount and the real efficacy of the whole circulating medium. Now, when we reflect that the currency has received immense additions during the money pressure from abroad—that the portions hoarded by individuals are thrown into circulation as soon as the panic subsides—that the banks which have rode through the storm are beginning to increase their business and push out their paper, and thus add to the circulating medium—that the United States' Bank has recovered from the shock which it sustained by the removal of the deposites, and is consequently enabled to do a more liberal and extended business, thereby enabling other banks to enlarge likewise—we are not to wonder, under these circumstances, that we have a redundant circulating medium; especially, when we recollect that this increased currency is circulating with greatly increased velocity: and the effect of these combined causes must be a vast enhancement of prices, and a consequent rage for speculation. I will exemplify this by a very simple illustration. Let us suppose a particular neighborhood, whose exchanges, in ordinary times, are effected by $1000. Now I have shown, if any causes operate to make the circulation only one-half as rapid as the ordinary circulation, then the $1000 will not appear to our little district to be more in amount, or in real efficacy, than $500. In this state of things, throwing out of view all other causes, prices in the neighborhood supposed would fall to half their former amount. Now, let us farther suppose that this fall in prices should cause an importation of $500 additional into the neighborhood, and that the rapidity of circulation was again restored, do we not clearly see that we should have a currency redundant by $500? And this would not only, on the great principle of supply and demand, carry up prices to their former level, but would increase them, in the case supposed, fifty per cent. beyond that level. Now what I have been saying here of a neighborhood, may with equal propriety be said of a whole nation. Let us suppose, for example, the circulating money of this country to be $100,000,000, in ordinary times; that the circulation becomes suddenly only one-half as rapid as before; then the whole $100,000,000, even supposing the quantity kept in circulation undiminished, will perform no more exchanges than $50,000,000 would with the former rate of velocity in the circulation. Prices then would generally sink to half their former amount; money would flow in, let us suppose $25,000,000; and immediately afterwards, the restoration of confidence, and the consequent re-establishment of the credit system, would communicate to the circulating medium the same velocity as before: you would then have a redundancy of twenty-five millions of dollars, and a consequent rise of prices at least twenty-five per cent. upon the principle of supply and demand alone. But the probability is, prices would rise greatly beyond this point, in consequence of the effect produced by a speculating mania—for when prices are rising, every one wants to purchase. Few are capable of reasoning upon the causes; hence an artificial competition is generated among the buyers, and property rises greatly beyond what it should do, upon the principle of actual supply and efficient demand. The reason of man on these occasions seems to be completely unhinged. He looks forward to the realization of wealth by changes in the price of property which he holds in his hands, and almost every one is disposed to turn speculator. And this speculating mania is generally first felt in regard to stocks, whose value is ever fluctuating, and therefore liable to the most sudden impulses, upwards and downwards. I understand at this moment the stock-jobbing spirit to the north has risen to a most extraordinary height. A gentleman, under date of the 28th April, writes me from Philadelphia, that railroads and canals are the order of the day there—that the papers scarcely find room for politics. He says, "two subscriptions have been opened for canals since I came here. The whole stock for the first was taken in thirty minutes. In the second, the whole stock was taken by the commissioners before the doors were opened. A rush and disappointment followed. Millions could have been taken," &c. All this arises from restored credit; from throwing suddenly the hoarded portions of money into circulation—from increased velocity of circulation—from issue of banks, &c.: all of which have contributed to make currency redundant, prices exorbitant, and the spirit of speculation wild and reckless. When I saw certain politicians congratulating the nation upon fresh arrivals of gold and silver a short time since, I could not but reflect upon the shallow knowledge of political economy which such congratulations proved. The influx of gold and silver was the clearest proof that could be furnished, of the general distress of the country; of the loss of confidence and credit; and of the stagnation of trade and the circulation. The importation of the precious metals could only be effected by parting with a large portion of our wealth; and as soon as a sound currency and circulation could be restored, this newly acquired portion was to be entirely redundant, and even mischievous in its operation, by raising in the community a speculating mania.

*What is to check this rise in prices and spirit of speculation?* — I will now examine into the manner in which this rise in prices is ultimately to be checked, and the spirit for speculation to be cured. And here let me observe, that as there is a certain point of depression below which prices will not go, in consequence of the *influx* of precious metals which this lowness of prices will certainly produce, so likewise there is a certain point in the elevation of prices beyond which they cannot well go, because of the *efflux* of the precious metals. It is this efflux which finally checks the speculating mania. I will explain: a rise in prices, when very great, makes our country a good market to sell *in*, but a very bad one to sell *from*; hence our imports will greatly overbalance our exports, and a money balance will be created *against* the nation, which must be paid in money. This produces the exportation of money until the redundancy is sent off; then prices fall, and ruin overtakes the most adventurous in the game of speculation—they involve others, and prices once more sink, from loss of confidence and credit, and stagnation in circulation, below their average level, to be brought up again by the operation of causes already pointed out. Whenever the pendulum of price, (if I may use the expression,) has, either by the operation of the natural course of events, or by the unwise and unskilful tampering of government, been thrown far into one extreme of the arc, it will, in its effort to regain its natural position, go almost so far into the opposite extreme; and the vibrations will frequently last through a long period of time.

*Do these Fluctuations depend entirely upon the Banks?*—Some suppose these fluctuations depend *entirely* upon the operation of the banking system. This, however, is not the fact. Banks may do a great deal, but are by no means omnipotent in the regulation of a currency. For example; when loss of confidence, stagnation of circulation, and fall of prices, derange the whole credit system, banks are affected like individuals; they are obliged to curtail their operations and check the farther emission of paper, lest a run upon them may break them. They may not under these circumstances have the ability to relieve the distress, however strong the inclination; the relief must come through the wasting process of *buying* metals from abroad. Again, when prices begin to mount upwards, banks, by seizing upon the favorable moment, may enlarge their issues, and thus swell still farther the already bloated state of the currency. But they cannot prevent, if they be specie-paying banks, the correction of the evil exportation of the metals; for so soon as these are redundant, they will be gathered up for a foreign market; a necessary run will then take place on the banks for the purpose of making the collection, and these banks must either suspend specie payment, curtail their issues, or break. On the first supposition, the evil would have to correct itself by a rise in exchange against us with foreign countries, to the amount of the depreciation caused in the currency by suspension of specie payment. In the second case, prices would be lowered by contraction of the currency from curtailment. In the third, by contraction from the withdrawal of all paper which had emanated from the broken banks, and a loss of confidence in the whole banking system, which would, by the runs made upon them, force all to curtail or break.

And thus may we always confidently look forward sooner or later, from causes whose operation I have pointed out, for either a rise in prices when they are very low, or fall when they rise very high. Whenever prices are disturbed, it is a long time before the equilibrium is again restored.

*Effect of Foreign Demand for some of our Agricultural Products on Present Prices.*—So far I have been arguing as if the present state of things were the result solely of that re-action which must sooner or later take place after great depression and stagnation of trade. But the rise in prices may be rapidly accelerated by an extraordinary foreign demand for some of our great staples. Most undoubtedly the rise in the *price of cotton* has at this moment very great agency in the high prices and rage for speculation, manifesting themselves every where. The price of cotton in this country is regulated by the prices abroad, because the foreign market taking up about four-fifths of the whole product of the United States, it is evident that the value of the article must be determined by the foreign, and not by the home demand. What is the cause of the immense rise which has taken place in the price of cotton within a few months I am unable to say. I am not at this moment in a condition to get at the statistical information required for the investigation of this subject, and my mind not being particularly directed to it, until within a day or two past, I have not noticed from time to time in the papers such articles as might perhaps have given me a clue to the explanation of this interesting phenomenon. Whatever may be the cause, however, whether a general deficit in the cotton crops over the world, or in the United States particularly; or to the rapidly increasing demand for cotton fabrics all over the world; or to a spirit of speculation in England; or to the gradual reduction of the tariff; or to all these causes combined; certain it is, that the price of this most important agricultural staple is now at a height which well indemnifies the planter for his labor, and will, if it could continue, diffuse wealth and prosperity over the whole of our southern country.

Let us now examine into the influence exerted by this rapid rise in the price of cotton: and in the first place it is manifest, that the rise in the price of cotton must have had a most important influence on the foreign exchanges. This article alone, constituting a very large portion of the whole of our exports, say two-thirds, a rise in its price has therefore tended to swell the value of our exports, and of course to make money flow more rapidly into the country, through the agency of a favorable balance of trade. From this cause, then, the late money pressure may have lasted a shorter time than it would under other circumstances.

*Influence of the Price of Cotton on the Value of Slaves.*—Again: the rise in the price of cotton has most undoubtedly given an impulse to the price of slaves. Cotton is the great agricultural staple throughout almost the whole of our southern slave-holding states, and consequently the marketable value of slaves will ever be determined by the value of the principal product of their labor. In Virginia and Maryland the price of slaves will always depend upon the external demand, and not on their intrinsic value in those two states.

If the price depended on the real demand arising among themselves, I doubt whether those states could afford to raise them even, so little would be their marketable value.

But there is another cause which I believe at *this moment* is operating in raising the price of slaves, and will exert a still more powerful influence in future. I mean the late *emancipation of the slaves in the British West Indies.* That act is certainly indefensible upon every ground of expediency, morality, and religion, but its impolicy appears most glaring when considered in a politico-economical light. Now, whatever may be said about the relative efficacy and value of free and slave labor, there is no question but that free labor, produced by sudden emancipation of slaves, is the most worthless and inefficient labor in the world. Let us take upon this subject the testimony of one who has favored emancipation in the West Indies, and who has already reaped some of the fruits of his folly. Lord Brougham, in his *Colonial Policy*, says, "The free negroes in the West Indies are, (with very few exceptions, chiefly in the Spanish and Portuguese settlements,) equally averse to all sorts of labor which do not contribute to the supply of their immediate and most urgent wants. Improvident and careless of the future, they are not actuated by that principle which inclines more civilized men to equalize their exertions at all times, and to work after the necessaries of the day have been procured, in order to make up for the possible deficiencies of the morrow. Nor has their intercourse with the whites taught them to consider any gratification as worth obtaining, which cannot be procured by slight exertion of desultory and capricious industry." The report of the committee of the Privy Council of Great Britain in 1788, of Mr. Braithwaite, the Agent for Barbadoes, and of M. Malouet, who bore a special commission to examine the habits and character of the Maroons in Dutch Guiana, all agree in asserting that free negroes are idle and worthless, and will never provide for the morrow with the foresight of civilized beings. The latter, M. Malouet, says: "Le repos et l'oisivete sont devenus dans leur etat social leur unique passion." Does not our own experience in this country prove the truth of his assertion? Do we not find the free negro the pest of the society wherever he is seen? He is the same idle, worthless creature in the north as in the south and west of our country. Have not the colonies at Sierra Leone and Liberia most conclusively proven the same fact? Does not the example of St. Domingo, which is now but a wreck of its former self, speak volumes on the same subject? Well, then, with all these facts and evidences before them, what could British statesmen have foreseen from the emancipation of slaves in the West Indies, but idleness and worthliness of the whole population? and is not this actually the result? Do not all the statements agree in asserting, that the system of apprenticeship has failed to realize the anticipated advantages? and the state of things will be still more deplorable if ever the negro shall obtain his perfect liberty. Now, what will be the consequence of all this? Why, that the British West Indies will soon cease to produce sugar for exportation, and will therefore throw the monopoly of its production into the hands of the slave-holding islands, and of Louisiana and the Floridas in our own country; and this will contribute at once to a rapid rise in slave property.

When St. Domingo was first liberated, the imaginations of mere speculative statesmen led them to behold a belt of black republics stretching through the West India Islands, diffusing their moral influence by commerce and social intercourse throughout the habitable globe. Now, what was the fact? Why, that St. Domingo was soon found to have such an idle, worthless population in her newly emancipated blacks, that her commerce was at once destroyed. She has entirely ceased to export sugar, although formerly the most productive sugar growing island in the world. Under these circumstances, to talk of moral influence is perfectly absurd. Those black islanders have been, by the effects of their own laziness and vices, as effectually cut off from the rest of the world as if St. Domingo has been enclosed by Bishop Berkeley's forty-foot wall of brass. The London Quarterly Review, in one of its most powerful articles, asserts that nothing but the condition of St. Domingo would have enabled the British West Indies to have borne the oppression of the mother country as long as they did; that St. Domingo being thrown out of the competition in the production of sugar, gave a sort of monopoly to the British islands which enabled them to bear the oppressive regulating legislation of the Parliament. Provided we are let alone by the busy meddling philanthropists, who can attend to every body's business but their own, every negro that gets his liberty in the West Indies, or in South America, will contribute to a rise, upon precisely the same principles, in slave property in our country. The liberation of the slaves in the British West India islands is already producing that effect. If the French, Spaniards, Portuguese, Danes, &c. shall be unwise enough to follow this lead, the southern states of our Union will most assuredly reap the benefit; and if Brazil, too, should follow the example, the effect would be almost complete. It would give us a monopoly in both sugar and cotton. Sugar is not made by free labor any where in the world. Even in China, all the sugar and cotton districts are cultivated by slave labor, which in my opinion has set to rest forever, in warm countries, the question about the relative advantages of free and slave labor. The cultivation of sugar requires a great deal of hard labor, which can be expected of the slave alone. In warm countries the principle of idleness triumphs over that of accumulation, and hence slave labor is universally the most efficient in warm and tropical latitudes. If all the slaves in the West Indies shall ever be liberated, Louisiana will become an *Eldorado.*

*Effect of the Rise of the Price of Cotton and Slaves, on Corn, Wheat, Tobacco, &c.*—The rise in the price of cotton and of slaves is of itself calculated to give an impulse, not only to all the agricultural products of the south, but of the north and west likewise, particularly of the west. Corn, which is the great staple of the middle states, is soon raised in value by high prices for cotton; because all the southern country, which is better adopted to the raising of corn than the middle states, raise cotton exclusively, and thus become purchasers of corn. The cultivation of cotton likewise gradually extends itself even into the middle states, and thus diminishes the quantity of corn raised still farther. In addition to these circumstances, there has been a deficient corn crop for the last two years, in consequence of distressing droughts in the latter part of the season, and too much rain in the commencement. Now, we must recollect that in any necessary of life, like corn, whose price is dependent on the home demand, if a deficit occur, the price will rise generally more than in proportion to the deficit.

The high price of cotton and corn will quickly communicate itself to horses, mules, hogs, cattle, &c., which constitute the great

staples of the west; for with corn and cotton high, the middle and southern States will cease in a measure to rear those animals, and consequently will become purchasers. Wheat and tobacco, depending mostly on the foreign market, will not be so much affected. But as ours is the principal tobacco growing country for all Europe, and as an extension of the cultivation of corn and cotton has a tendency to diminish that of tobacco, it is evident that tobacco would be more influenced than wheat by rise in the price of cotton and corn. Accordingly we find that tobacco is now selling very high. The high price of cotton is likewise calculated to make the south a better market for all the products of the north, and to give increased activity to the commercial interest, in which the north possesses the deepest stake. Mr. Lee, the author of the celebrated Boston Report on the Tariff, and one of the best statists which this country can boast of, estimated the advantage flowing to the north from the transportation of the cotton of the south, as equal to $5,000,000 on cotton, amounting in value to $25,000,000.

*Summary of the Causes of the Present Prices.*—Thus have I rapidly sketched out the causes which have been operating in producing the present prices. In the first place, the late removal of the deposites, and the consequent caution and curtailment of business on the part of the Bank of the United States, together with the unfriendly relations existing between that bank and the state banks, which imposed the necessity of a similar curtailment on the latter, gave a shock to public and private credit, which plunged the country into the greatest distress, and rendered the circulating medium scarce every where, by both diminution of quantity and of the rapidity of circulation. This at once brought down prices to a minimum. The importation of the precious metals from abroad was the immediate consequence of lowness of prices, and tended to relieve the pressure by increasing the curreney. By and by, the banks that rode safely through the storm, began when things settled down, to enlarge their business, confidence and credit were restored, and a redundant circulating medium is the consequence. This of itself is capable of producing high prices, independent of other causes; but in the present instance, it has been aided by the great foreign demand for cotton, which, together with the emancipation of slaves in the British West Indies, has made slaves rise in value throughout our slaveholding country. It has indirectly contributed to the high prices of corn, tobacco, and the staples of the west, and will no doubt, if it continues, diffuse prosperity over all the northern states, in the way I have already explained.

*Prospects.*—In the mean time, let me ask what are our prospects? I answer, that this rise in prices has already excited a rage for speculation, which will, in all probability, carry up prices still higher. A fever for speculation, when once excited in the body politic, always produces, both economically and morally, the most disastrous consequences. It destroys that regular persevering industry by which alone a nation can be enriched. It attracts the capital and resources of the country towards chimerical projects and airy bubbles. During the prevalence of the South Sea scheme in England, hundreds of projects were set on foot, and the sums proposed to be raised by these expedients amounted to more than $300,000,000, which exceeded the value of all the lands in England. On these occasions, so intoxicated do the people become with a spirit of adventure, that they fall victims to the grossest delusion. Only call it a joint stock company, and thousands of dollars instantly flow into the scheme. All are anxious to enrich themselves by a single stroke of good fortune. The hard-working, plodding man, is looked upon with contempt. Habits of the most luxurious and vicious character are speedily introduced. There is nothing more true than the old adage, "*easy come—easy go.*" A man who makes a fortune at a stroke, is almost sure to spend it extravagantly. He must live high, and give costly entertainments, to purchase the attention and consideration of the new circle into which his wealth has just introduced him. The great merchants, lawyers, physicians, &c. follow the example which is set by the speculators—a reckless, profligate, gambling spirit, is spread through the country—one half the nation is trying to grow wealthy by the ruin of the other half. Every kind of deception, falsehood, and trickery, are resorted to for the purpose of influencing the markets. "During the infatuation produced by this infamous scheme, (South Sea,)" says the historian, "luxury, vice, and profligacy, increased to a shocking degree of extravagance. The adventurers, intoxicated by their imaginary wealth, pampered themselves with the rarest dainties, and the most expensive wines that could be imported; they purchased the most sumptuous furniture, equipage, and apparel, though without taste or discernment; they indulged their criminal passions to the most scandalous excess; their discourse was the language of pride, insolence, and the most ridiculous ostentation; they effected to scoff at religion and morality, and even to set heaven at defiance." A bill was actually brought into the British Parliament for the suppression of blasphemy and profaneness, to so fearful a degree had the spirit of speculation and gambling effected the morals of the people.

The disastrous influence of this rage for speculation in our own country, during 1817, 1818, and part of 1819, was almost as great as that produced in England by the celebrated South Sea bubble, or in France by the Mississippi scheme.

With regard to Virginia, I do not think the mania will be so apt to reach her in its most aggravated form. The high price of negroes and cotton, now producing a fearful emigration to South West, where golden harvests will be realized, if present prices can only be kept up, the spirit for speculation will in a great measure direct itself towards south-western lands. Hence, although corn, wheat, and tobacco, may rise, this exhausting drain of our labor and capital to the south-west, will keep land in this state from rising *pari passu*. Our labor and capital both are swept from our soil as fast as accumulated. At this moment in Virginia, there is a mighty struggle going on between the elastic principle of the black population on the one hand, and the drain to the south-west on the other. And if the high price of slaves shall be kept up for a few more years, I doubt whether all the procreative energies of the race can compensate for the emigration; and in that event we shall be obliged to fill up with Irishmen and northern laborers, or leave the soil of the state comparatively stript of labor. In the mean time, however, let us preserve our sobriety, our industry, and our morality, enjoying the present advantages of high prices, without rushing into schemes and adventures of a wild and reckless character, under the vain belief that these times are to last forever. Sooner or later, if prices rise above the natural level, they must come down by a process which I have alread pointed out. If cotton shall fall speedily or if a superabundant corn crop shall be made this year, these extravagant prices would be checked at once. And we must recollect, too, that the Bank of the United States is quickly to wind up, and if its curtailment shall be very rapid, it may force the whole banking system of the country to contract its accommodation, and thus, perhaps, to give a shock once more to public confidence. At all events, let us remember the moral of the famous epitaph—"I was well—I wished to be better—and here I am."

May 21, 1835.

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[From the Maine Farmer.]

GRAIN AND HOED CROPS.—Mr. Holmes: In the article in your last paper on comparing "grain and hoed crops," you appear to make Indian corn the criterion by which to judge of the profits of hoed crops. If this is the fact, and corn is a fair criterion on which to judge of the profits of all hoed crops, then I will go with you, heart and hand, in throwing aside the hoe, and using only the harrow, the sickle, &c. for I consider Indian corn one of the most unprofitable and uncertain crops a farmer can put into the ground. But before I do this I should like to make a few figures by way of calculation, to see what crops do actually neat the most clear profit, not that I would have one crop cultivated at the entire exclusion of all or any other, but that we may be enabled to cultivate the most of that which will yield the most profit, all things considered, and considering the seasons as they have averaged for the last five years. Without spending time to show that hoed crops (except corn) can be raised on land of an inferior quality, and with less manure than wheat, &c. we will suppose an acre of land prepared to receive wheat. For the last five years an average crop of turnips from that acre would be 500 bushels, worth 20 cents per bushel, . $100,00

An average crop of potatoes would be 350 bushels, worth 1s. 6d per bushel, . . . . . 87,50

| | | | | |
|---|---|---|---|---|
| Crop of peas and oats, 35 bushels, at 4s. . . . . | | | | 23,34 |
| " Oats, | 40 bush. | at | 3s. | 20,00 |
| " Rye, | 25 " | " | 3s. | 16,67 |
| " Wheat, | 18 " | " | 6s. | 18,00 |
| " Beans, | 20 " | " | 12s. | 20,00 |
| " Indian corn, | 15 " | " | 6s. | 15,00 |

From this calculation, which I believe is not far from the facts, it appears that turnips and potatoes are far more profitable than grain crops, and grain is more profitable than Indian corn. With corn, *all* depends on the season; for the last five years, the chance has been three to two to lose the whole crop, while all other crops named have given a small yield, even the poorest season. I have known a number of fields of corn within that time to prove total failures; and the smallest yield of wheat that has come to my knowledge, five bushels to the acre; the smallest crop of oats, fifteen bushels; smallest crop of rye, (one piece of winter rye excepted,) nine bushels; smallest

crop of potatoes, ninety-five bushels; of peas and oats, ten bushels. These were each on land of very inferior quality, and in such poor order, that no one would have thought of attempting to raise corn on it. I have not been particular in keeping an account of the best crops that have been raised, as they are so frequently trumpeted through the newspapers that every body has an opportunity to know about them. I have frequently seen statements of how large a quantity of hops have been raised to the acre, but am not able to determine what is a medium crop, and how small a crop has been raised, and whether they do not sometimes prove a total failure. Will some of our readers answer these inquiries.

June 12. M. S.

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[From the Maine Farmer.]

SMUT IN GRAIN, &c.—Mr. Holmes: Having established, to my own satisfaction at least, the powerful agency of fermentation in producing a state of disease in wheat, as well as other grain plants, and expressed as I believe clearly my views on this important subject, in connection with the disease of rust in wheat, I propose now to take a view of this subject as connected with other diseases in grain generally; and as smut seems to be a prominent one, it is probable my remarks will chiefly apply to it. And here I remark that I do not introduce this subject because I profess to understand it, even imperfectly, but because I wish to. And should I be as successful in pursuing this inquiry as I heretofore have been in my inquiries on the subject of rust, I shall not regret the pains. I say successful, because, although many writers treat explicitly on the deleterious effects of high manuring in raising grain, no one that I have read throws much light on this subject. Some have supposed its injurious effects originated from the profuse flow of sap it occasioned in the vessels of plants, thus causing them to burst, and flow out on the stalks and leaves, and produce rust. Forsyth, speaking of fruit trees, says he has seen trees or branches of some considerable size burst from this cause. This idea seems to have been a peculiar favorite with many. Some indeed have adopted it with different modifications, but all that I have examined miss the most material fact, the disorganizing effects produced by too rapid fermentation on the roots of grain plants. How this produces an effect on other vegetation is not a subject of inquiry now.

Here then we may just as well stop and examine our foundation as not; dismissing our learned as well as unlearned guides, and study simple nature one summer season. Not but what I believe some are useful in investigating this subject, when employed in its proper place; but the fact is, this subject has by some means got encumbered with so much rubbish, it will take some time to clear it away.

To accomplish so desirable an object is one reason why I have introduced this subject so early in the season, as I find many inquisitive minds awake on this subject: that while I am treating occasionally on this subject, others may watch the progress of vegetation, and test by actual observation the correctness of my statements or inferences. And in this business the most unlearned, the humblest farmer, may perform an essential service. I do then most earnestly solicit your co-operation. If your productions are knotty, Mr. Editor will knock them off most cheerfully I dare say.

This subject I plainly foresee, to render it any justice, will take some time, and as some of my communications may be too lengthy to suit short-winded readers, I wish you, Mr. Editor, to divide them to suit the taste and convenience of your readers; and should any one find any thing he does not readily understand, only just intimate his wishes in the Farmer, and I will most cheerfully explain. No one need be in the least afraid of getting into any altercation with me in the Farmer, for this is business which I despise. If I give a joke, I will take one, and there, at least with me, the matter will end.

J. H. J.

Peru, May, 1835.

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[From the London United Service Journal.]

LANG'S PATENT CORDAGE.—The manufacture of cordage is an object of paramount importance to a maritime country, although the consumption of hempen rope has lately been more successfully invaded by the use of iron chains, than ever it was by the various attempts made with hides, wool, grass, and other materials. We have, therefore, perused the pamphlet circulated by Macnab and Company, of Greenock, with considerable interest, and can recommend it to the notice of our readers as a clear exposition of a most useful invention.*

The art of rope making had been a sort of *rule-of-thumb* process till our own days: and no very serious attempts were made to correct the obvious defect of different tension on the component parts of the twisted strand. The science of Huddart, however, and the practice of Chapman, were brought to bear upon this important point, and introduced the principle, by which an increase in the strength of the cordage was effected by simply so constructing the rope as that every yarn is made to bear its own proportion of the strain. And it is by carrying this principle to its utmost that Mr. Lang has been enabled to effect an additional increase of strength, and, consequently, of durability to the rope. This has been accomplished by means of a machine affording a more just arrangement, regular twisting, and equal bearing of the fibrous substances which are employed in the composition of the yarns, than any heretofore used.

The utility of such an improvement, upon what has been aptly termed "the very sinews and muscles of a ship," will be manifest, by recurring to the well known question of M. Reaumur, as to the strength of ropes made of twisted strands, compared with those composed of parallel parts, selvage fashion; in other words, whether the strength of a cord was greater or less than the sum of the strength of its threads. After gathering all that could be urged for and against twisting, the philosopher had recourse to experiment to decide between them. The result was, that contrary to all expectation, the twisting was found to diminish the strength of the rope; whence it was readily inferred that it diminishes it the more as the rope is the thicker. For, inasmuch as the twisting diminishes, the more twisting the more diminution, according to the system in use previous to Captain Huddart's making the yarns all bear an equal proportion of the strain. Successive improvements caused the strands to be laid more uniformly in the rope, and every strand to receive an equal degree of twist, by which the rope was rendered stronger, and of a general degree of strength throughout.

By Mr. Lang's invention, all the former principles are carried into still greater effect; and by it the regular spinning of yarns, which had hitherto been prepared in a tedious and clumsy manner by hand labor, is accomplished. But a still more important object has been achieved. By the same plan, the hemp, to whatever purpose applied, being drawn over a succession of gills, or small hackles, is dressed in the highest degree: hence the fibrous substances of the hemp are regularly split and subdivided; they are also multiplied to such an extent, that their number in a patent spun yarn will be found more than double the quantity of those which compose a hand-spun yarn of equal girth, which must increase its strength in no inconsiderable degree. Again, while the fibres are thus greatly multiplied, they are also completely elongated and laid straight, so as to admit of being regularly twisted, and each fibre being stretched its full length, and laid parallel to others in the yarn, they are all made to bear at the same time, and equally, in the strain; thus every fibre of the hemp is called into action, and contributes its own proportion of strength to the fabric. Nor is this all. By hand labor the hemp can only be spun from the bight, or middle; and, therefore, only one-half of the length of its fibre is extended in the yarn; consequently, some qualities of hemp have hitherto been considered inferior, because, on account of the shortness of their fibre, they would not admit of being doubled. Now, Mr. Lang's plan has this additional advantage, that the hemp is spun by the end of the fibre, and thus, by having its whole length extended in the yarn, those qualities of hemp hitherto considered inferior, because shorter, may be applied with equal safety and advantage, and do in reality produce cordage as strong and as durable as the others. Indeed, the average length of what is termed staple hemp, when spun from the bight, may be estimated at about

* Exposition of the Principles of Mr. J. Lang's Invention for spinning Hemp into Rope Yarns by Machinery, and its effect on the strength and durability of Cordage.

twenty-seven inches; whereas the average of the pass, or short hemp, by having its whole length extended, is about thirty-five or thirty-six inches; if, therefore, length of fibre is essential to the tenacity of the yarns, the new system has the decided advantage.

Such are the principles of Mr. Lang's invention; and as it produces a superior article, and at a cheaper rate than the competitors in the trade can supply it, it is evidently entitled to patronage. We regret, however, to find that the proprietors have to complain of detraction and wilful misrepresentation; but we think the statements made by them are fully substantiated, both by actual experiment, and by the testimony of many unimpeachable individuals who have used the patent cordage. The question, of course, turns upon the two essential properties of ropes, which are strength and durability. To ascertain the former, reference has been made to immediate proof by experiment; and the tables which Macnab and Company have inserted in their exposition of the comparative trials under different circumstances show a triumphant balance in favor of the patent spun hemp. In forming a judgment of the other quality, a considerable time must necessarily elapse before all the various contingencies of climate and treatment can be examined. At the same time, it will be admitted, that the strongest cordage must, in the nature of things, be the more lasting. The tear and wear of a rope are properties absolutely inseparable; its strength must depend on the soundness of its material, and on its construction; and in proportion as these effect its strength, so must they also its durability.

These are grounds upon which Macnab and Company vindicate the patent cordage; and we think the impartial seaman, who peruses their pamplet, will rise well satisfied with their conclusions.

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[Extract from the Massachusetts Agricultural Repository, &c.]

*List of the Forest Trees of America, described in the work of M. Andre F. Michaux.*

[The botanical name of each tree is first given, followed by the most common American name. The *vulgar names* used in various parts of the United States, or Canada, next follow.]

Pinus rubra, Red pine.—Red pine, only name given to this tree in Canada; often used in Nova Scotia and New Brunswick, and in Maine. Norway pine, name more generally in use for this tree than the above, in the district of Maine, New-Hampshire, and Vermont, but less proper. It is not the Norway pine, says Michaux. Yellow pine, name sometimes given to it in Nova Scotia. Pin rouge, or red pine in Canada. Michaux prefers red pine, as being more characteristic and distinct.

Pinus rupestris, Gray pine.—Gray pine, in Canada, by the French and English. Scrub pine, in Nova Scotia and Maine. Uncommon and ordinary. Michaux.

Pinus mitis, Yellow pine.—Yellow pine, general name in all the middle states. Short-leaved pine, in the southern states. Spruce pine, a secondary name in these last mentioned states.

This is described by Michaux as a pretty valuable tree, ranking after the red pine, which is again put far behind the long-leaved or pitch pine of the south, and the white pine of the north.

Pinus inops, Jersey pine.—Jersey pine, general name in New-Jersey, where it abounds. Scrub pine, the name given to it in Virginia, and in those parts of Pennsylvania where it *is* found.

Pinus pungens, Table-mountain pine.—Table-mountain pine, the only name given to it in the neighborhood of that mountain, in North Carolina.

Pinus australis, Long-leaved pine.—Yellow pine. Long-leaved pine. Pitch pine, (not the pitch pine of the north.) Broom pine. All which names are more or less used in the lower parts of the southern states, where alone this tree grows. Southern pine and red pine, are the names given to it in the middle and northern states, by those who use it. Georgia pitch pine, name given to it in the West Indies, and in England.

Pinus serotina, Pond pine.—Pond pine, name given by M. Michaux to this pine, which has none given to it in the southern states, where he found it.

Pinus rigida, Pitch pine.—Pitch pine, general name in all the northern and middle states. This is the true pitch pine of New-England, but very different from the pitch pine of the south.

Pinus tœda, Loblolly pine.—Loblolly pine, only name in the southern states. White pine, sometimes so called in the neighborhood of Petersburg, Virginia.

Pinus strobus, White pine.—White pine, only name given to this tree in the greater part of the United States, and in Nova Scotia and New-Brunswick. Pumpkin pine and sapling pine, names sometimes given to it in Vermont, New-Hampshire, and Maine, in reference to the quality of its wood. Pin blanc, or white pine, by the Canadians. Weymouth pine, in England.

Abies nigra, Black spruce, (double spruce.)—Black, or double spruce, name used in the northern states, in Maine, and Nova Scotia. Red spruce, in the same countries, having regard, however, to trees of larger size than usual, or to certain places of growth. Epinette noire, in Canada. Sapinette noire, in France.

Abies alba, White spruce.—White, or single spruce, names applied in the northern states, and in Nova Scotia. Epinette blanche, in Canada. Sapinette blanche, in France.

Abies canadensis, Hemlock spruce.—Hemlock, or hemlock spruce, only denomination in use in all parts of the United States, where this tree is found. Perusse, by the Canadians.

Abies balsamifera, Silver fir.—Silver fir. Fir balsam. Balm of Gilead. All names equally applied to this tree in the northern parts of the United States.

Juglans nigra, Black walnut.—Black walnut, only name in the southern and western states. Noyer noir, by the French of Canada and Louisiana.

Juglans cathartica, Butter nut.—Butter nut, only name in New-York, and Virginia, and often applied in the northern states. White walnut, name much in use in Pennsylvania and Maryland. Oil nut, name applied in New-Hampshire, Massachusetts, Vermont, and Connecticut.

Juglans olivæ-formis, Pacane nut.—Pacane nut, or pacanier, name given to this tree by the French of Louisiana, and adopted by the Americans.

Juglans amara, Bitter nut hickory.—Bitter nut hickory, only name applied to it in New-York and New-Jersey. White hickory, general name in Pennsylvania. Noyer amer, Canadian name.

Juglans aquatica, Water bitter nut hickory.—Water bitter nut, name given to it by Michaux. It has no name in the southern states, where it grows.

Juglans tomentosa, Mockernut hickory.—Mockernut hickory, general name in New-York and New-Jersey. Whiteheart hickory, name sometimes applied in those states. Common hickory, applied in Pennsylvania, Maryland, and other southern states. Noyer dur, by the French of the Illinois country.

Juglans squamosa, Shellbark hickory.—Shellbark hickory, name in most common use in the United States. Shagbark hickory, name sometimes applied to the north of Connecticut river. Kisky Thomas, by the Dutch of New-Jersey. Noyer tendre, by the French of Illinois.

We think M. Michaux mistaken on this point. It is the common walnut of our tables, and is almost universally called shagbark. In all the northern states, we know this tree by the name of walnut, and not hickory, which is a southern name.

Juglans laciniosa, Thick shellbark hickory.—Thick shellbark hickory, name given to this tree in the western states, where it is confounded with the true shell, or shagbark. Gloucester-nut hickory, known under this name only in that part of Virginia. Springfield hickory, another name given to this tree in the vicinity of Philadelphia.

Juglans porcina, Pignut hickory.—Pignut hickory, most common name in all parts of the United States. Hognut hickory, more usual name in some districts of Pennsylvania.

Juglans myristicæformis, Nutmeg hickory-nut.—Nutmeg hickory-nut, name given to it by M. Michaux, it having no name in the southern states.

Quercus alba, White oak.—White oak, general and unique name throughout the United States. Cheneblanc, by the Canadians.

Quercus muscosa, Mossy cup oak.—Mossy cup oak, name given by M. Michaux to a species found in the Genessee country, and near Albany.

Quercus macrocarpa, Overcup white oak.—Overcup white oak, general name given to it in Kentucky and Tennessee.

Quercus obtusiloba, Post oak.—Post oak, general name in both Carolinas, Georgia, and Tennessee. Iron oak, secondary name in those countries. Box oak and box white oak, name given to it in Maryland, and the parts of Virginia bordering on it.

Quercus lyrata, Overcup oak.—Overcup oak and swamp-post oak, names equally

[illegible] in the lower parts of the southern states. Water white oak, secondary name in the same places.

Quercus prinus discolor, Swamp white oak.—Swamp white oak, most common name in the northern and middle states. Water-chestnut oak, Pennsylvania name.

Quercus prinusp alustris, Chestnut white oak.—Chestnut white oak, name applied in the lower parts of Georgia, and the Carolinas. White oak, peculiarly so called on the Savannah river. Swamp-chestnut oak, secondary name in the same places.

Quercus prinus monticola, Rock-chestnut oak.—Rock-chestnut oak, only name given to this tree in New-York and Vermont. Rock and rocky oak, second name in the same countries. Chestnut oak, in Pennsylvania and Virginia.

Quercus prinus acuminata, Yellow oak.—Yellow oak, name given to this tree in the county of Lancaster, Pennsylvania. No particular name given to it in other parts of the United States.

Quercus prinus chinquapin, Chinquapin oak.—Chinquapin oak, name employed in the upper parts of Georgia and the Carolinas. Small-chestnut oak, in New-York and Pennsylvania.

Quercus virens, Live oak.—Live oak, only name in all the southern states; and also in the northern states, where the wood is only seen, but the tree is never found.

Quercus phellos, Willow oak.—Willow oak, only name in the southern states, and in Pennsylvania.

Quercus imbricaria, Laurel oak.—Laurel oak, secondary name in the states west of the Allegany mountains. Black-jack oak, more common, but less proper name, because it is applied to another, for which it is kept distinct. Chene a latte, by the Illinois French.

Quercus cinerea, Upland willow oak.—Barren's willow oak, name given in the lower parts of the southern states.

Quercus pumila, Running oak.—Running oak, in the lower parts of the southern states.

Quercus heterophylla, Bartram's oak.—Bartram's oak, name given to an oak on the Schuylkill, near Philadelphia.

Quercus aquatica, Water oak.—Water oak, general name in Virginia, and in the southern states.

Quercus ferruginea, Black-jack oak.—Black-jack oak, name in use in the southern states. Barren's oak, name employed in Pennsylvania, New-Jersey, and Delaware.

Quercus banisteri, Bear oak. — Bear oak, name in New-Jersey and New-York. Black scrub oak, name used in the north of Connecticut river. Scrub oak, in some parts of Pennsylvania and Virginia.

Quercus catisbœi, Barren's scrub oak.—Barren's scrub oak, in the lower parts of the two Carolinas and Georgia.

Quercus falcata, Spanish oak.—Spanish oak, only name in use in Pennsylvania, Maryland, and Virginia. Red oak, in the lower parts of the southern states.

Quercus tinctoria, Black oak. — Black oak, only name in the forests of the middle, western, and southern states. Quercitron oak, name in commerce. Chene noir, by the Illinois French.

Quercus coccinea, Scarlet oak.—Scarlet oak, name given by M. Michaux to a tree, which, in the middle states, bears the name of red oak, being confounded with a species hereafter mentioned.

Quercus ambigua, Gray oak. — Gray oak, only name given to this species in New-Hampshire and Vermont, as well as in the district of Maine, New-Brunswick, and Nova Scotia.

Quercus palustris, Pine oak. — Pine oak, name given to this species in New-York and New-Jersey. Swamp Spanish oak, in Pennsylvania and Maryland.

Quercus rubra, Red oak. — Red oak, name given to this oak in all the northern and middle states.

In all 27 species of oaks.

Betula papyracea, Canoe birch.—Canoe and paper birch, names equally used in New-Hampshire, Vermont, district of Maine, Nova Scotia, and further north. White birch, name also equally applied in the same countries. Bouleau a canot, by the French in Canada.

Betula populifolia, White birch.—White birch, general name in the northern and middle states. Old-field birch.

Betula rubra, Red birch.—Red birch, so called in New-Jersey and some parts of Pennsylvania. Broom birch, secondary name in Pennsylvania. Birch, in the southern states.

Betula lenta, Black birch.—Black birch, denomination applied to it in the northern and middle states. Cherry birch, secondary name in some parts of the northern states. Sweet birch, in the middle states. Mountain mahogany, in a part of Virginia. Cherry birch. Bouleau cerisier, by the Canadians.

Betula lutea, Yellow birch. — Yellow birch, name given to this species in Vermont and New-Hampshire, as well as in Maine and New-Brunswick.

Castanea vesca, Chestnut. — Chestnut, only name given to it in all parts of the United States where it grows.

Castanea pumila, Chincapin.—Chincapin, only denomination given to it in the middle, southern, and western states.

Fagus sylvestris, White beech.—Beech, in the middle and southern states. White beech, in the northern states and district of Maine.

Fagus ferruginea, Red beech. — Red beech, in the northern states, and district of Maine.

Chamærops palmeto, Cabbage tree.—Cabbage tree, or palmetto, in the southern states. This tree is extensively used in the construction of wharves in Charleston, South Carolina, being free from the ravages of the worms.

Ilex opaca, American holly.—American holly, so called in all the parts of the United States where it grows.

Diospiros virginiana, Persimmon tree.—Persimmon, only name in those parts of the United States where it is found, being in the middle and southern states. Plaqueminier, by the Louisianians.

Acer eriocarpum, White maple.—White maple, only name on the borders of the Ohio, and the rivers which fall into it. Soft maple, in the Atlantic states, where it is often confounded with the scarlet maple, Sir wager maple, name applied to it in England, where it has been introduced.

Acer rubrum, Red-flowering maple.—Red-flowering maple, Swamp maple, Soft maple, denominations in the Atlantic states. Scarlet-flowering maple, principally in Virginia, and soft maple in New-York and New-Jersey. Maple tree, in Pennsylvania, Virginia, and Ohio, to the west of the Allegany mountains. Erable plaine, by the Canadians.

Acer saccharinum, Sugar maple.—Sugar maple, general name, which, however, prevails only in the middle states, to the east of the mountains. Rock maple, name which prevails to the north of the Hudson river. Hard maple, another name in the northern states. Erable sucre', Canadian name.

Acer nigrum, Black sugar maple.—Sugar tree, general name in the country on the Ohio, and the Rivers which fall into it; and often applied also there to the last mentioned species. Black sugar tree, name sometimes applied, and to be preferred.

Acer negundo, Box elder.—Box elder, only name in the western states where the tree is most known. Ash-leaved maple, name given sometimes in the Atlantic states. Erable a giguiere, by the Illinois French.

Acer striatum, Moose wood.—Moose wood, common name in all the northern states, in New-Brunswick, and Nova Scotia. Striped maple, by some persons in the middle states.

Nyssa grandidentata, Large tupelo.—Large tupelo, most general name in the southern states. Water tupelo, secondary name in the same states.

Nyssa capitata, Sour tupelo.—Sour tupelo, in Georgia.

Nyssa sylvatica, Black gum.—Black gum tree, in all the states to the south of the Delaware. Sour gum, secondary name in the same states. Peperidge, by the Dutch of New-Jersey.

Gymnocladus dioica, Coffee tree.—Coffee tree, only name given in the western states. Chicot, by the Canadians. By some botanists called guilandina dioica.

Pinckneya pubens, Georgia bark.—Georgia bark tree, name given by M. Michaux; it is known by no name in that country.

Cupressus disticha, Cypress.—Cypress, general name in the United States. It is not known at all in the northern states, except in modern plantations, and there called deciduous cypress. Bald cypress, name less used. Black or white cypress, having regard to the color of the wood.

Cupressus thuyoides, White cedar.—White cedar, only name in the states of New-York, New-Jersey, Delaware, and Pennsylvania. Juniper, in Maryland, Virginia, and North Carolina.

Thuya occidentalis, Arbor vitæ.—Arbor vitæ, secondary name in the District of Maine. White cedar, name more used in Maine, Vermont, and New-Hampshire. Cedreblanc, by the Canadians.

Larix americana, American larch.—American larch, general name given to this tree in all parts of the United States where it grows. Hackmatack, more used in the

north, and in the district of Maine. Tamarach, by the Dutch of New-Jersey.

N. B.—This tree is very seldom called by the name of larch in New-England, and in some districts it is called Juniper.

Juniperus virginiana, Red cedar.—Red cedar, only name given to this tree in all parts of the United States where it grows.

Q. Is it not sometimes called *savin?*

Olea americana, Devil wood.—Devil wood, name given to this tree on the Savannah river, in Georgia.

N. B.—We doubt the expediency of establishing this unfashionable name to any tree.

Carpinus ostrya, Iron wood.—Iron wood, only name in all the states to the south of the Hudson. Lever wood, in the district of Maine and Vermont.

Carpinus americana, American hornbeam.—American hornbeam, only name given to this tree throughout the United States.

We doubt whether it is ever called any thing but simply *hornbeam.*

Hopea tinctoria, Sweet leaves.—Sweet leaves, only name in use in the southern states.

Malus coronaria, Crab apple.—Crab apple, name given to this tree in all the southern states.

Q. Is this a native or indigenous tree?

Mespilus arborea, June berry.—June berry, name given to this tree in the middle states. Wild pear, in the district of Maine.

Magnolia grandiflora, Large magnolia.—Large magnolia, most common name in the cities of the southern states. Big laurel, in the country of the southern states. Laurier tulipier, by the Louisianians.

Magnolia glauca, Small magnolia.—Small magnolia, name given to this tree by many persons in New-York and Philadelphia, as well as in some parts of New-Jersey. Swamp sassafras, secondary name at a given distance from the above cities. Sweet bay, white bay, and swamp laurel, names more used in the southern states. Beaver wood, name formerly given to it in New-Jersey.

Magnolia acuminata, Magnolia cucumber tree.—Cucumber tree, only denomination in all the western states, and along the Allegany mountains.

Magnolia cordata, Heart-leaved magnolia.—The heart-leaved magnolia, name given to this species in Upper Georgia, and which is confounded with the preceding.

Magnolia tripetala, The umbrella tree.—The umbrella tree, only name given to this tree in the middle and southern states.

Magnolia auriculata, The ear-leaved magnolia.—The ear-leaved magnolia. Indian physic, denomination most in use in the mountains of North Carolina and Virginia, but less proper. Long-leaved cucumber tree, second name in the same countries.

Magnolia macrophylla, Large leaved magnolia.—Large-leaved magnolia, name given by M. Michaux to this species, which is confounded with the next preceding one.

Fraxinus americana, White ash.—White ash, only name given to this species in all parts of the United States where it grows.

Fraxinus tomentosa, Red ash.—Red ash, most general name in all the middle states, where this tree is most abundant.

Fraxinus viridis, Green ash.—Green ash, name given by Michaux to this tree, which has none where it is found.

Fraxinus quadrangulata, Blue ash.—Blue ash, only name in Kentucky and Tennessee.

Fraxinus sambucifolia, Black ash.—Black ash, most general name in the northern and middle states. Water ash, secondary name in this part of the United States.

Fraxinus platicarpa, Carolinian ash.—Carolinian ash, name given by M. Michaux. It has none in the southern states, where he found it.

Gordonia lasyanthus, Loblolly bay.—Loblolly bay, only name in the southern states.

Gordonia pubescens, Franklinia.—Franklinia, name given by W. Bartram, in honor of Dr. Franklin.

Cornus florida, Dogwood.—Dogwood, only name given to this tree in the United States. Bois de fleche batard, by the French of Louisiana.

Rhododendron maximum, Swamp laurel.—Swamp laurel, so called on the Allegany mountains, where this tree is most abundant.

Kalmia latifolia, Mountain laurel.—Mountain laurel, most common name in the Allegany mountains. Sheep laurel, secondary name in the same places. Calico tree, in some parts of the southern states.

N. B.—M. Michaux considers that this plantis nor found to the north of the Hudson river. It is abundant in some parts of Massachusetts, where it is generally only a shrub. He says it grows in Carolina to the height of 15 or 20 feet, and as its wood is very hard, it is applied to some useful purposes in the arts.

Cerasus virginiana, Wild cherry.—Wild cherry, only name given to this tree throughout the United States.

Cerasus caroliniana, Wild orange.—Wild orange, only name given to this tree in the southern states.

Cerasus borealis, Red cherry.—Red cherry, name less used than that of small (or dwarf) cherry, but which is more appropriate.

Annona triloba, Papau tree.—Papau, only name given to it in the middle and western states.

Gleditsia triacanthos, Honey locust.—Honey locust, known under this name only in all parts of the United States where it grows.

N. B.—M. Michaux is mistaken in this general assertion. It is also called three-thorned acacia, in the catalogues of the nursery-men.

Gleditsia monosperma, Swamp locust.—Swamp locust, in the maritime parts of the southern states. Water locust, secondary name in the same parts of the southern states.

Laurus sassafras, Sassafras.—Sassafras, only name given to this tree in the United States.

Laurus caroliniensis, Red bay.—Red bay, only name given to this tree in the maritime parts of the southern states.

Platanus occidentalis, Button wood.—Button wood, name generally given in the United States, particularly the Atlantic ones. Plane and sycamore, names more used in the western states. Water beech, name given to it in some parts of Maryland and Virginia. Cotonier, by the French of Upper Louisiana.

Liquidambar styraciflua, Sweet gum.—Sweet gum, only name in the United States.

Lyriodendron tulipifera, Poplar or tulip tree.—Poplar, general name in the United States. N. B.—This is an evident mistake of M. Michaux. It is seldom called poplar, and it is an improper name to be affixed to it as its popular one. Tulip tree, most common name in the northern states, where it is only known as a cultivated tree. Yellow or white poplar, White wood, name in the Genesee country.

Bignonia catalpa, Catalpa tree.—Catalpa tree, general name in the southern states.

Andromeda arborea, Sorel tree.—Sorel tree, name given to this tree on the Allegany Mountains, and in the middle states.

Celtis occidentalis, Nettle tree.—Nettle tree, in all the United States.

N. B.—We doubt its having such, or any other name, in the northern states.

Celtis crassifolia, Hackberry tree.—Hackberry tree, only name given to it in Kentucky and Tennessee. Hoop ash, upon the borders of the Ohio river, in Pennsylvania and Virginia. Black elder, less common name in the same places.

Morus rubra, Red mulberry.—Red mulberry, only name given to this tree in all the United States.

Pavia lutea, Buck eye.—Buck eye, only name given to it on the Allegany Mountains, and in the western states.

M. Michaux ought to have added, that it is also called the yellow-horse chestnut.

Æculus ohioensis, Ohio buck eye.—Ohio buck eye, name given by M. Michaux, who claims to have been the first who distinguished it.

N. B.—The popular name of this tree ought also to be either American, or Ohio horse chestnut; for M. Michaux admits it is in truth a horse chestnut, and it would be very embarrassing to admit such confusion in popular names.

Robinia pseudo-acacia, Locust tree.—Locust tree, general name in the United States. Yellow locust, red locust, black locust, different names given to this tree on the Susquehannah, having regard to the varied color of the wood.

Robinia viscosa, Rose-flowering locust.—Rose-flowering locust, name given by M. Michaux to this tree in the Cherokee country, where it has no peculiar name.

N. B.—It has, however, been called so elsewhere.

Virgilia lutea, Yellow wood.—Yellow wood, name given to this tree in Tennessee.

Ulmus americana, White elm.—White elm, general name given to this tree, in all parts of the United States where it grows. Michaux.

N. B.—We doubt the generality of this application. It is new to us. It is generally called, in the vicinity of Boston, American elm, or simply elm.

Ulmus alata, Wahoo. — Wahoo, name given to this species in the maritime parts of the southern states.

Ulmus rubra, Red elm.—Red elm, most common name in all parts of the United States where it grows. Slippery elm, secondary name in New-York and New-Jersey. Moose elm, in the upper parts of New-York. Orme gras, by the Illinois French.

Planera ulmifolia, Planer tree.—Planer tree, name given to it to preserve the memory of some individual. Michaux.

N. B.—We are not told who this personage was, nor why the tree (as M. Michaux, in the French idiom, remarks) was consecrated to him.

Populus tremuloides, American aspen.—American aspen, name given to this tree in the northern and middle states. Michaux.

N. B.—Sometimes called aspen poplar, and sometimes poplar only.

Populus grandidentata, American large aspen. — American large aspen, name given by M. Michaux to this species, which is ordinarily confounded with the preceding one.

Populus argentea, Cotton tree.—Cotton tree, known by this name on the Savannah river.

Populus hudsonica, American black poplar. — American black poplar, name given by M. Michaux to a species (as he says) before destitute of a name.

Populus monilifera, Virginian poplar.—Virginian poplar, name given in Europe to this species.

Populus canadensis, Cotton wood. — Cotton wood, name given to this tree on the Mississippi, and the rivers which flow into it.

Populus angulata, Carolinian poplar.—Carolinian poplar, name given to it in Europe, because first brought from Carolina.

Populus balsamifera, Balsam poplar.—Balsam poplar, known under this name in Canada.

N. B.—It is probable M. Michaux means by this, or the next, the tree which is called black poplar, tacamahac, and balm of Gilead poplar, in the state of Massachusetts.

Populus candicans, Heart-leaved balsam poplar.—Heart-leaved balsam poplar.

N. B.—If this is a different species from the last, it is the tacamahac of Massachusetts.

Tilia americana, Bass wood. — Bass wood, prevailing name in the north and middle states. Lime, name almost as frequent.

Tilia alba, White lime. — White lime, this species on the Ohio is confounded with the last.

Tilia pubescens, Downy lime tree.—Downy lime tree, thus called in the southern states.

Alnus serrulata, Common alder.—Common alder, in all the United States.

Alnus glauca, Black alder. — Black alder, in Vermont.

Salix nigra, Black willow. — Black willow, general name in the United States.

Salix ligustrina, Champlain willow. — Champlain willow, name given by M. Michaux, who found it on Lake Champlain in great plenty.

Salix lucida, Shining willow.—Shining willow, name given by M. Michaux.

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FAIR OF THE MECHANICS' INSTITUTE OF THE CITY OF NEW-YORK. — The following circular is cheerfully published with a view of calling attention to the subject.

Institute Rooms, City Hall,
New-York, July 1, 1835.

This institution was founded in 1830, and incorporated by an act of the Legislature, in 1833, and now enumerates about seven hundred members; and has for its object, the instruction of mechanics and others in all the useful branches of science and the arts, while the tenor and spirit of its construction prohibits the introduction of politics, religion, or irreligion.

The course of education in our common schools, which the young mechanic generally leaves for the workshop, enables him to acquire a knowledge of reading, writing, and the rules of common arithmetic: but beyond these branches it scarcely makes any pretensions: he therefore labors under a serious difficulty at the very commencement of his business, namely, that of being compelled to learn a set of dry and often uninteresting rules, without a previous acquaintance with the principles upon which they are founded. It was with the view of supplying this deficiency, as well as others hereafter to be mentioned, that the 'Mechanics' Institute of the City of New-York' was established. It was designed as a school for teaching the most useful branches of physical and chemical science, to prepare the mechanic to understand and appreciate the lectures of the college or university, and thus increase his knowledge, usefulness, and happiness. The institution is founded on the most liberal principles, and though intended especially for mechanics, is open to all who are disposed to avail themselves of its privileges. An initiation fee of two dollars and the same amount in annual dues secure admission to its lectures, and exhibitions, and also to the use of the library.

In accomplishing its designs, the Institute has established regular annual courses of lectures on a variety of subjects connected with improvements in the arts, but more especially on chemical and mechanical philosophy. It has also an excellent library, a reading room, museum of models, and a valuable collection of chemical and philosophical apparatus — all of which are appropriated for the benefit of its members. To increase still more the facilities for the acquisition of useful knowledge, the Institute has engaged a scientific gentleman, who, under the supervision of the Board of Directors, has charge of the entire property, and gives his personal attendance at the rooms, which are now kept open day and evening throughout the year.

The Institute Rooms, situated in the City Hall, and consisting of a lecture room, reading room, library, museum of models, apparatus, etc., are now opened daily for the uses of the members and for the inspection of the public, where all who feel an interest in the advancement of science and improvement in the arts, are most cordially invited to call and obtain for themselves more perfect information as to the character, objects, and history of this institution.

To extend still farther its usefulness, and to carry more fully into effect its designs, the Institute has come to the determination to establish an *Annual Fair*, where the results of the genius and industry of the mechanic can find a ready avenue to the public eye, and thus be known and appreciated.

It is not intended that the Fair shall be confined to the productions of our own city; but, on the contrary, it is hoped that its managers may have the gratification of enumerating amongst the articles for exhibition, the productions of mechanical genius from every city and town of the Union.

Under these considerations, the Managers appeal with confidence to the public, and particularly to all immediately interested in the improvement and perfecting of the mechanic arts, to support them in their praiseworthy object—the moral and intellectual elevation of the mechanic, both in his own estimation and in that of others.

It may be further stated, that the Fair will be solely conducted by mechanics, for their improvement and benefit, and that the funds arising from the proceeds will be appropriated for the advancement of the objects of the Institute; it relies, therefore, with the utmost confidence on a liberal patronage from the public generally, and more especially from mechanics.

The Fair will be opened on Tuesday morning, the 29th of September next, at Castle Garden, where all articles for exhibition must be brought on the day previous.

For more detailed information, address the Corresponding Secretary of the Mechanics' Institute, City Hall, New-York.

A circular to the mechanics will soon be issued, containing an account of the premiums to be awarded, and the regulations by which the Fair will be governed.

*Committee of Arrangements:*

Samuel Carter, John Bell, William Ballard, Jonas Humbert, Jr., Henry Durell, John W. Dodd, N. S. Hunt, George Bruce, John Thomes, William Stebbins, Peter Walters, Uzziah Wenman, L. D. Gale, S. S. Ward, William Belcher, William Partridge, Oliver White, G. L. Price, Sereno Newton, Thomas Godwin, J. S. Redfield, W. H. Hale, James Walters, Gabriel Furman, John N. Baur, Daniel A. Robertson, Henry Cunningham, Thomas Timpson, John Steele, Jr., Henry Ludwig, James McBeath, John Remick, G. D. Kashow, George Sullivan, Charles Belcher, John Wint, P. C. Cortelyou, Colin Lightbody, William Norris, Fitch Taylor, Adam Hall, Robert Smith, William Everdell, Alex. Masterton, L. D. Chapin, William Frisby, Walter L. DeGraw, L. Feuchtwanger, Augustus Campbell, Samuel Bailey.

SAMUEL CARTER, Chairman.
L. D. GALE, Secretary.

*By order of the Institute:*

GEORGE BRUCE, President.
HENRY CUNNINGHAM, Secretary.

☞ Editors and others, to t he cause here advocated, are requested to use their influence in giving publicity to this circular.

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HARVEST.—The Williamsport (Md.) Banner of Saturday says, the harvest has commenced in that county, and the prospect of a fair average crop in the county is very good.

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THE CROPS in the neighborhood of Montreal, for the greater part, are pretty far advanced, and bid fair to be abundant. Barley, oats, hay and pasture lands, in particular, look uncommonly well. Wheat is not so far advanced as the others, and in some parts it has suffered from vermin. The season has been as yet rather too cold for Indian corn, but a month or two of warm weather may still bring out a fair crop.—[Montreal Gazette.]